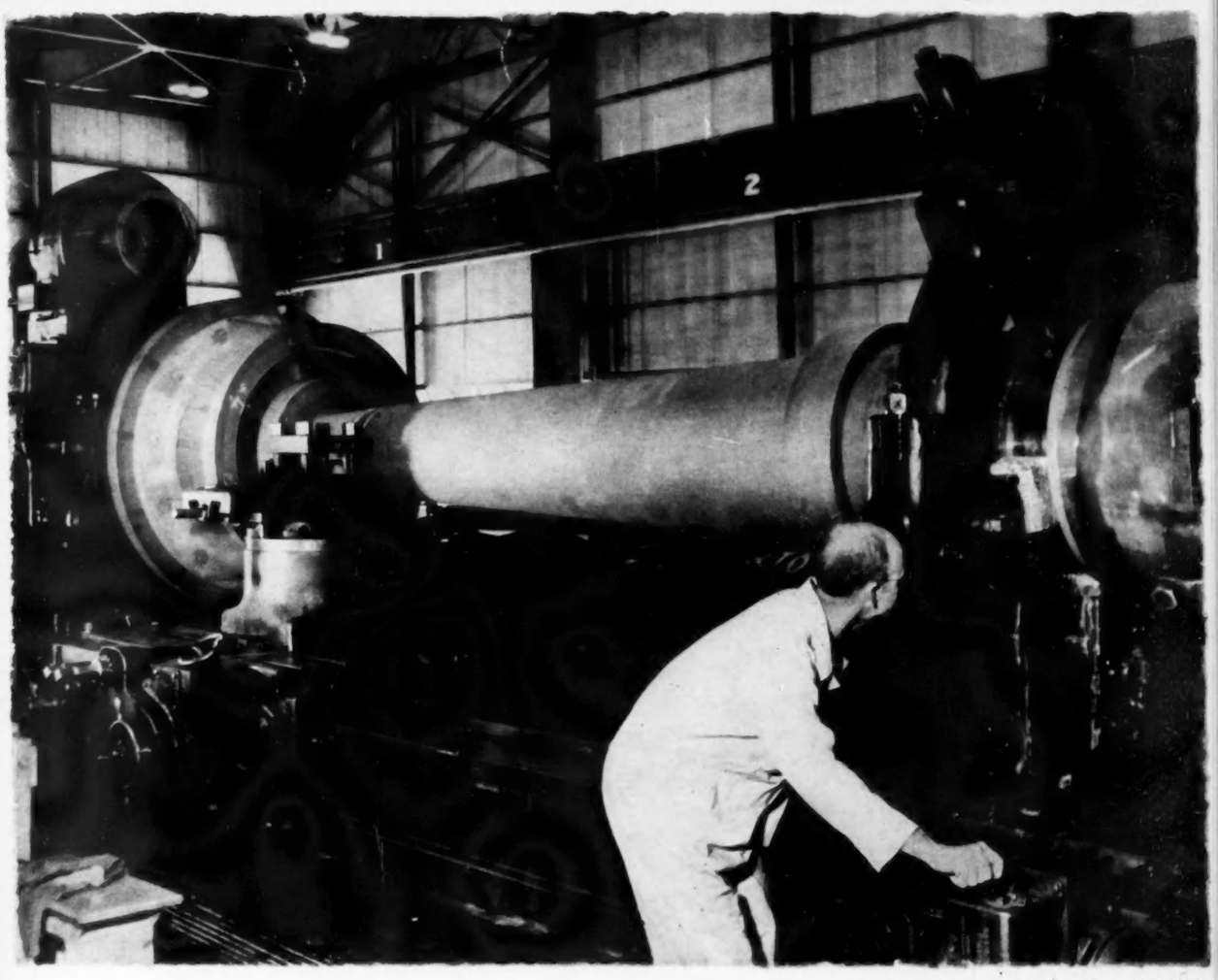
The OIL WEEKLY



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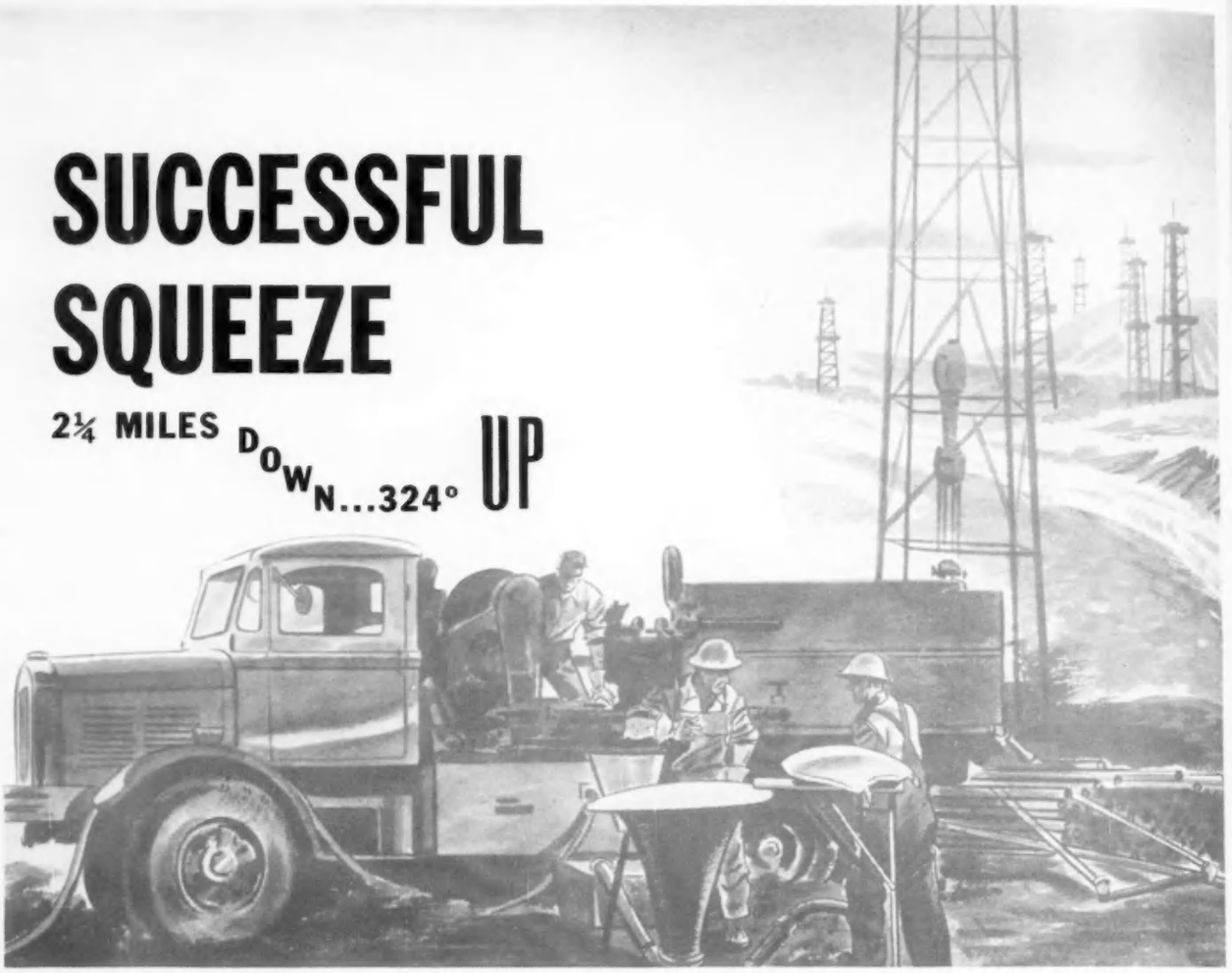

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The OIL WEEKLY and The COMPOSITE CATALOG for the drilling-producing-pipeline industry

PETROLEUM REFINER and The REFINERY CATALOG for the refining-natural gasoline industry

LOOKING AHEAD
...with the Editor

TO MEET the wartime scarcity of steel, a newly developed substitute tank roofing is being installed on many oil tanks in Mexico. The material is a plastic slab laid over a mineral-wool base. Aside from meeting the shortage of steel, the plastic tank roof is highly non-corrosive, and therefore especially suited for application where corrosion conditions are severe. Life of the plastic roof is put at 20 years or more. In addition, tests indicate that the insulating qualities of the roofing material will reduce evaporation losses of the more volatile petroleum fractions. The costs compare favorably with that of a steel roof.

The installation of this non-rusting plastic tank roof will be described in an article to be published next week.

THE OIL MAN'S CALENDAR

OCT.	
25–27	Independent Petroleum Association, Blackstone Hotel, Fort Worth.
26–28	American Gas Association, Jefferson Hotel, St. Louis.
NOV.	
8–11	American Petroleum Institute, Palmer House, Chicago.

THE OIL WEEKLY

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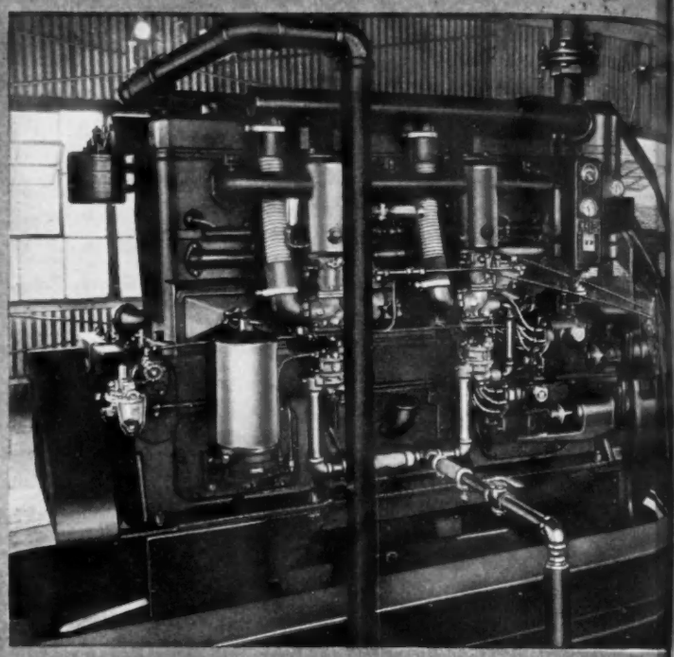

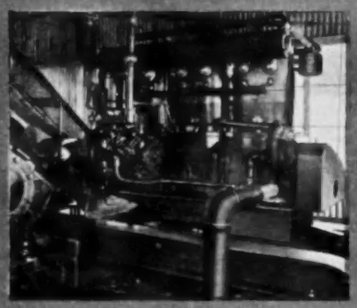

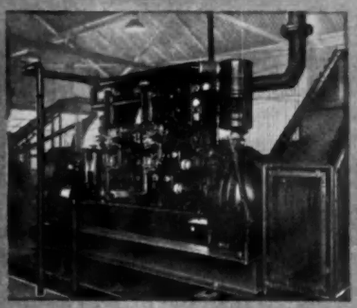

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The Changing Panorama

Spacing Regulations Should Be Relaxed

EVER since the start of the war, PAW has advocated a large wildcat drilling program as being necessary to the discovery of sufficient new oil sources to maintain the nation's known reserve position. There can be no arguments with the thoughts behind this policy, and there is still an urgent need for an extensive exploratory campaign. However, in view of sharply enlarged production rates which have absorbed practically all the nation's ability to produce, an oil shortage in this country is here today and not still a prospect for sometime in the future. Consequently, today, there is need for steps to be taken that will increase the current daily producing capacity.

Due to the wide spacing regulations under which the industry has operated since Pearl Harbor, there are many proved locations in the country that have not been drilled. The quickest, surest and most economical way to increase current daily producing ability is to permit the drilling of these proved locations. It is known that oil exists below these locations, and this would get the largest amount of additional producing ability with the least amount of steel. In other words, PAO-11 spacing regulations should now be relaxed in all fields where large quantities of oil could be produced without damage to the producing formation if more wells were completed. There are many fields now developed on 40-acre spacing where 20-acre spacing could be permitted without injurying the reservoir. There are others where 20-acre spacing could be reduced to 10 acres per well.

This would appear to be a wise course where studies indicate reservoir conditions would not be injured.

Tube Mills in Shape To Fullfill Demand

FROM the present outlook, "the tubular goods industry is well prepared to take care of the needs of the oil industry during the coming year," George Clifford, vice president of Spang Chalfant, Inc., told THE OIL WEEKLY last week.

Surveys dealing with the prospective demand for drill pipe, casing, and tubing during 1944 indicate an average requirement of approximately 40 tons of new tubular goods per well to be drilled in 1944. This is in addition to used material salvaged for re-use.

"Tube mills," Clifford said, "are in shape to take up and meet all the needs of the industry now in sight. However, when the oil companies started last week placing orders for their entire domestic requirements for the first quarter of 1944 at one time, we obviously could not promise delivery in January for the entire quarter's requirements. Deliveries will be made during the quarter all right, but it appears that they will be strung out at the rate of one-third of the quarter's requirements per month. Foreign orders which are anticipated may come behind the domestic orders, which were approved first by the PAW. This may mean delay in some instances in making foreign deliveries."

Contractors Should Compile Names of Former Workmen

WITH the drilling program for 1944 calling for completion of more than 24,000 wells, it is imperative that a large number of skilled drilling crewmen be recruited at once if this program is to be carried out. Drilling contractors should begin immediately to compile the names of all former drilling workers who are now employed in other defense industries other than the armed services. This is in accordance with the War Manpower Commission's offer (THE OIL WEEKLY, October 11, 1943) to negotiate for the return of these men to the drilling industry, where evidence shows that the man can best serve the war effort as an oil well drilling crewman, and the men are willing to return to the drilling industry.

It is necessary that contractors immediately compile the names of such men so that their lists may be sent by the American Association of Oilwell Drilling Contractors (1410 Gulf States Building, Dallas, Texas) to the War Manpower Commission for early investigation. The association will maintain a central recruiting office and will be the direct intermediary between the drilling contractor and WMC. All drilling contractors should cooperate to make the plan effective, whether they are a member of the association or not.

It is suggested that contractors contact their superintendents, toolpushers, drillers and others who may be able to furnish addresses of former employes. It does not matter where these former employes are located. However, it is important that the men be willing to return to the drilling industry, and this assurance should be obtained by the contractor before submitting their names.

Foreign Sources Producing More

SHARPLY increased output during the past few months has boosted the current oil producing rate of all foreign petroleum sources now available to the Allied Nations back to or above levels that existed at the time of Pearl Harbor, with the exception of Venezuela. This fact seems to have been overlooked by those demanding that oil sources outside of the United States be called upon to supply a larger portion of the heavy military consumption of petroleum.

Of course, this situation does not necessarily mean that these countries do not have the ability to produce larger quantities. However, most of them were producing at or near their highest level in history during 1941. Therefore, it is likely that it will be found most of them will need either more wells, more pipe lines, more plants or more shipping terminal facilities before they can materially increase their production. This will require lots of steel and time.

In the Near East we find this situation: Iran, which produced an average of 175,000 barrels daily during 1941, currently is producing 200,000 barrels. Iraq is now producing 75,000 barrels per day in contrast with 35,000 barrels per day in 1941. However, the country was producing around 75,000 barrels daily back in 1938 and 1939, before France fell. Egypt's current output is at a peak of 25,000 barrels per day in contrast with 20,500 in 1941. Bahrein is up from 18,500 to 20,000 barrels. Saudi-Arabia's production of 15,000 barrels per day is practically the same as in 1941. Thus, the Near East is producing 335,000 barrels per day currently in contrast with 264,000 barrels back in 1941.

Further eastward, India has increased its production from 6000 barrels daily in 1941 to a current level of 7300 barrels.

In South America: Venezuela currently is producing 585,000 barrels compared with its 613,100 barrels peak attained in 1941. Colombia, which produced 67,100 barrels daily in 1941, is now back up to 60,000 barrels per day. Argentina's 68,-

000 barrels per day currently exceeds its 59,625 barrels in 1941. Trinidad is at a record level of 60,000 barrels now against 58,100 barrels in 1941. Ecuador is up from 4265 barrels in 1941 to 7500 barrels currently, and Peru is up from 32,665 barrels in 1941 to 40,000 barrels today. Thus, current production in South America is around 820,500 barrels per day, practically the same as its 834,855 barrels in 1941, which was its all-time high.

Louisiana Has Best Discovery Record

COMPARATIVE figures on results of wildcat drilling in the seven leading oil-producing states for the first nine months of both 1942 and 1943 reveal that Louisiana has the best record in each case. Not only did that state ring up a successful producer-wildcat percentage nearly double the United States average in the two comparable periods, but these percentages were far larger than those for the six other important states.

The accompanying table presents a tabulation of the detailed figures on seven states. Louisiana was so far ahead of the other states in 1942 that even though it had a decline of wildcat producers, amounting to 2.7 percent in 1943, its 1943 record is far better than that of second-place Illinois, which registered a gain in productive percentage of 2.6, followed by California, which had a gain of 1.7 percent, while the other five leading states showed declines. The greatest decline occurred in Oklahoma, which fell off 8.8 points in percentage of successful wildcats.

The figures used in comparing these individual state performances do not include either extension wells or semi-wildcat tests, nor are they broken down to differentiate between oil, gas and distillate discoveries. They do include new-pay discoveries, which totaled 138 for the first nine months of 1942, and 107 for the same period this year. All but 10 of the new pays were oil sands in the 1942 period, and all but 14 in the 1943 column. Louisiana and Texas habitually account for most of the distillate discoveries, with Texas leading by a considerable margin. Thus, Louisiana distillate finds are not responsible for that state's outstanding wildcat results for the two years under discussion.

Oklahoma, which dropped farthest this year, managed to run almost even with the national average of 14.8 percent successful wildcats. It is noteworthy, also, that of the seven leaders only New Mexico (43 wells), and California (153 wells) had results below the national average this year, indicating that the decline in the national figure was based mostly on results in less important states.

Horizontal Oil Well Ready To Be Shot

WITHIN the week, Venango Development Corporation expects to shoot its horizontal oil well that it has been drilling near Two Mile Run, near Franklin, Pennsylvania.

This new type well is to drain the oil through a series of horizontal holes extending outward from a vertical mine shaft. The Venango well has an 8-foot diameter mine shaft extending 429 feet below the surface into the oil producing sand. At the bottom of the shaft is a 27-foot working chamber. Two horizontal holes now extend about 2500 feet each, or a total of 5000 feet through the oil-bearing body, although ultimately a total of 24 such horizontal penetrations are expected to be made.

Norwegian Tanker Claims Championship

THE "Tanker Championship" of the war is being claimed for one of Norway's boats. According to the Norwegian Shipping and Trade Mission, the tanker, unidentified for security reasons, has crossed the Atlantic Ocean 45 times during the four years of war, transporting 100 million gallons of gasoline—enough to fuel 1000 four-motor bombers for 100 bombing missions to the Ruhr area of Germany.

The ship, which sometimes sailed without convoy protection, once had part of her bow blown off by a mine.

The Diesel Engine Has Grown Up

PRIOR to the war the diesel-engine industry of the United States accounted for the manufacture of approximately 2 million horsepower annually. During 1943 approximately 25 million horsepower of diesel engines will be manufactured.

Compared with the gasoline engine, the diesel engine industry is still a pygmy. Nevertheless, its rate of growth during the war stamps it as a real factor in the prime motive field after the war. This will have its influence on the oil industry.

There have been notable improvements made in the diesel engine since the start of the war. Diesels are now available in a complete line, ranging from very small sizes up to behemoths. There has been considerable improvements in flexibility of operations also, especially in the small sizes that might be used to power automobiles, tractors and other moving objects. With the large manufacturing capacity constructed for war purposes, the cost of diesel engines in the postwar period is likely to be smaller than previously.

Drilling Activity in California at Peak

DRILLING activity in California is at the highest level in recent years. During the first nine months of the year, California completed 1048 wells, which was 115 percent more than the 486 completed in the like period of 1942. Current drilling also is more than double that of a year ago. On October 1, the state had 328 rigs in various stages of drilling, compared with 152 a year ago.

This record is the envy of other states, which have been curtailed in drilling to below 1942 rates. Texas' total for 9 months was down 31.5 percent, Louisiana down 38 percent, Oklahoma down 9.8 percent and Illinois off 8.8 percent.

The big spurt in California drilling is due to a 25-cent increase in crude prices granted earlier in the year, and the relaxation of PAW spacing regulations. Others have not received price increases, except small boosts in local areas, and are still handicapped by spacing regulations except in the shallower regions.

Comparative Results of Wildcatting in Seven Leading Producing States*

	January-September, 1942			January-September, 1943			
	Productive Wildcats	Dry Wildcats	Percent Productive	Productive Wildcats	Dry Wildcats	Percent Productive	Net Change in Year
California	5	86	5.5	11	142	7.2	+1.7
Illinois	68	373	15.4	59	268	18.0	+2.6
Kansas	38	233	14.0	44	298	12.9	—1.1
Louisiana	34	83	29.1	23	64	26.4	—2.7
New Mexico	6	31	16.2	5	38	11.6	—4.6
Oklahoma	48	156	23.5	34	197	14.7	—8.8
Texas	162	726	18.2	132	689	16.1	—2.1
Total U. S.	402	1,994	16.8	363	2,081	14.8	—2.0

* Exclusive of Extensions and Semi-Wildcat Tests.

Economics and Politics Don't Mix

By JOHN D. GILL, The Atlantic Refining Company

Before Texas Mid-Continent Oil and Gas Association, October 13, 1943

THE unsolved general crude oil and petroleum products price problem of 1942-43, and maybe also 1944, establishes the incompatibility of economics and politics, the classical use of the term "political economy" notwithstanding.

If all of our country's economic problems were to be handled by the government the way the crude price problem has been handled, the economic progress of the country would slow down to a state of putrid stagnation. The record is now clear that major economic matters, which are inherently complicated, cannot be administered arbitrarily, dictatorially, capriciously, through orders and directives without serious impedance to progress, and indeed even loss of production. Nor should we allow our minds to be confused on this issue by the prodigious growth of production of certain classes of goods during the war.

It is one thing for the government to bring about an expansion of production by placing vast orders for war goods for free enterprisers to fill. It is quite another thing to operate an entire industry, like the petroleum industry, subject as it and other industries are to the immutable laws of economics. I know that the would-be controllers of our economy will scoff at the term "immutable laws of economics," but for my part I am willing to stand by the term for the sufficient reason that the laws of economics are immutable to the extent that human nature is immutable. If fascists would change one, they must also change the other. We have a pretty good test of governmental control of economic activities, and can find little virtue in that control.

The government's failure to approve the recommendation of the Petroleum Administrator for War for a general increase in the prices of crude oils and products as petitioned by the Petroleum Industry War Council in a resolution passed unanimously on February 3 of this year may prove to be the most significant economic fact of the current war period.

For many months the need for stimulating the search for crude oil in the United States has been evident to students of the industry. The importance of oil to the winning of the war was so great that it was natural to assume that the governmental authorities having jurisdiction would take the initiative and provide the time-tested stimulant, namely, appropriate prices for crude oils and petroleum products. The industry itself was slow to act in this direction, no doubt because of a desire to avoid what might seem like self-seeking in a time when intense patriotic fervor must be implemented by sacrifice. Finally, however, the Petroleum Industry War Council ordered a study of the entire situation. Its study group, composed of long-experienced and competent specialists who had attained high executive rank submitted a comprehensive report on the third of February, 1943. The report dealt with all of the pertinent historical facts. It showed the increasing trend of costs, the decreasing trend of discoveries of crude petroleum, and, so far as possible, the forecasted trends of demand and supply. The data indicated an impending shortage of supply. In a summary statement to the War Council the committee unanimously recommended an immediate general increase in the present price ceilings on crude petroleum of 25 cents per barrel, which, considered in the light of subsequent events, was a conservative recommendation. It also recommended increases in the prices of products commensurate with the increase in crude oil.

Its recommendation was the basis for a resolution passed unanimously by the Petroleum Industry War Council on the same day, requesting the Petroleum Administrator for War to give his earliest possible attention to the facts and conclusions of the report to the end that the recommendations contained therein should be made effective. The case made by the Petroleum Industry War Council committee was well documented and so strong that after five weeks of study, specifically on the seventh of April, the Petroleum Administrator for War recommended to the Price Administrator a general increase in crude oil prices of 35 cents per barrel, or 10 cents higher than the recommendation of the committee. The Petroleum Administrator's recommendation was categorically denied by the Price Administrator on May 1. About six weeks later (June 10) the Petroleum Administrator again asked the Price Administrator for favorable action on his recommendation. Many weeks later, August 7, the Price Administrator wrote a second denial.

In the meantime, April 8, the chief magistrate of the nation issued an executive order, which has become known far and wide as the "hold-the-line" order. It will be referred to hereafter as the administration's magnificent obsession. The implications of its enforcement are far reaching. We may see in the days to come that the attainment of a high order of success in "holding the line" may be considered by the administration as its greatest achievement during the war. The reason for this statement should be understood. If the administration can control the price level in times of war; if it can even roll prices back against terrific upward pressures, then it has demonstrated that it can control a peacetime economy.

But while the mouth of the Petroleum Administrator for War was closed by another executive order prohibiting public expressions in refutation of the position taken by the Price Administrator, while the latter freely used the press, the Petroleum Administrator was not prevented from carrying the discussion beyond the Office of Price Administration to the Office of Economic Stabilization. The reason this action had to be taken was, curiously enough, succinctly expressed in the interim report of the Petroleum Subcommittee of the Committee on Naval Affairs when it said:

> "At a recent hearing of the subcommittee representatives of the offices of the Petroleums Administrator for War and the Price Administrator presented their respective views as to the 35-cent per barrel increase in the price for crude oil recommended by Administrator Harold L. Ickes to Administrator Prentiss M. Brown on April 7, 1943. Both

agencies used the same facts and figures, but arrived at diametrically opposite conclusions."

Now the reasons for reaching diametrically opposite conclusions are important. There are at least two very important reasons. The more important of the two appears to be the opposition of the Price Administrator to any change which would diminish the rigorousness of enforcement of the hold-the-line policy. It is noteworthy, however, that his opposition on this ground is ill-founded in view of the industry's disclosure that an increase of 35 cents per barrel in the price of crude oil and an equivalent increase in the price of products amounting to approximately eighty-five hundredths of a cent per gallon would affect the cost of living index to the extent of less than six hundredths of one percent. Such opposition to change is arbitrary, whimsical, capricious, and uneconomic under any circumstances, but is especially culpable at a time when the need for petroleum with which to fight the war to a quick conclusion and provide for civilian requirements makes it highly desirable to remove every factor tending to create shortage in supply.

The second reason for diametrically opposed conclusions of the government agencies is of a technical sort, generally not well understood. It concerns the fundamental facts of petroleum economics, with special reference to the time factor. The Office of Price Administration has seemed willing to look only at historical facts: past costs in relation to past prices. It has ignored the important fact of the lag between the initiation of exploratory effort and fruitfulness therefrom. On the other hand, the Petroleum Administrator has aptly considered the unique character of the petroleum resource and sensed the full significance of the fact, clear to all students of the subject, that a declining rate of discovery indicated an increasing trend of costs which must be met by an increasing trend of prices if the declining trend of discovery was to be reversed. The problem is one of relativity which can be understood only by minds willingly open to the implications for the future of historical facts. The Office of Price Administration was not only unwilling to count chickens before they were hatched; it has been unwilling to provide the hens to lay the eggs from which the chickens might be hatched.

Was ever a case more fully documented than the industry's case for a crude price increase! But the better it has been supported by factual data and plausible projections into the future, the more arbitrarily it has been resisted. There has been no fair and final judge of the merits of the cases of the contestants, namely, the Petroleum Administration for War and the Office of Price Administration. The latter contestant, indeed, is also judge. That one thus far says "No." Even now that the matter is in the hands of the Office of Economic Stabilization, there is no clue to a decision even in the questions the Stabilizer asks when seeking additional information. To use a military term, this perhaps is in the nature of a delaying action.

Delaying action, and disregard of other high authority, are not unusual. For example, this same office rendered a negative decision on an increase in wages which had been awarded by the War Labor Board upon joint recommendation of the affected industry, of labor, and of officials of the War Production Board. The reference here is to the refusal to approve increasing the minimum wage rates from 40 cents to 50 cents an hour for piece workers in the work glove industry. In ordinary times it would have been supposed that the Labor Board, the members of the industry and the labor therein would have been quite well supplied with the necessary facts at the time they formulated their unanimous conclusions. According to reports available at this time no reason was given for the Stabilizer's negative decision, although it was accompanied by a request for additional information. Under such conditions as these how could the petroleum industry expect prompt favorable action on its petition even though well documented and supported by one governmental agency.

The importance of this matter to the members can hardly be exaggerated. It is important to all regardless of function or size, and particularly to those operators who have long carried the indefinite but inspiring title of independent producers. What these independent producers have done for the economy of the United States in the last 80 years will never be adequately told. The use of petroleum has contributed greatly to the rapid advance of the economy of the United States, and it has been the fearless free enterprising spirit of the independent producers which has made it possible for this great industry to grow. In the days when geologic and geophysical science were non-existent, or of small proportions, the independent producers included in their members men who practiced the art of petroleum exploration and discovery. Even now in a day which we consider characterized by the advance of science, the art of crude petroleum exploration is of an importance to be conjured with. Sometimes the view is expressed that the independent producer has been passing out of the great petroleum picture. But this is not the fact. The fact is that even over the recent decade, from 1932 to 1941, when the production of the entire United States increased from 785 million barrels to the all-time peak of 1402 million barrels, the output position of the smaller corporate, partnership and invdividual producers held its own. Nor must we ever forget Mr. Joiner's work in the East Texas area, nor the probability that many billions of barrels of oil are still to be found in stratigraphic traps, ever the quarry of the intrepid and intuitive independent operator. For the best service to the public the industry needs to employ the science of exploration, but at the same time it cannot get on well without the art of exploration.

I shall not tax you with lengthy statistics of price comparisons to prove that the price of crude oil has lagged behind the prices of virtually all other important commodities in the upswing since the beginning of the present great war. But I must call your attention to the fact that as of the end of September the average price of crude oil at the well in the United States was less than 1 percent above the average for the year 1937, while the prices of all commodities at wholesale, according to the Bureau of Labor Statistics, was more than 19 percent above the average level for all commodities in 1937. This comparison of itself does not offer indisputable evidence for the need of a crude oil price adjustment, because after all, as the Office of Price Administration now openly states, prices must be related to profits through costs. But costs of producing oil have risen, as shown by the government's own data and by that of other agencies, by a substantial increment, while prices have remained virtually stationary.

Now "profits, as reported," have evidenced a stability and magnitude which appear to have created the complacency which the Office of Price Administration exhibits when discussing its negative decision on the industry's petition. This is a matter which requires close examination. Here again, in the judgment of the speaker, the dynamics of the situation should be examined and given more weight than the statistics. As a matter of fact, as a result of the decline in drilling activity, the profits of many reporting units have been fictitious—inflated by the absence from the cost side of the profit and loss statement of the usual substantial charges for dry holes and for certain other temporarily discontinued operations. And all the while that the oil industry's prices are restrained below levels which would provide it with funds needed to accelerate its exploratory campaign, persons from other industries, like the aircraft industry, which have been favored by high war-contract incomes, have preferred to expend at least a part of their gross income in the speculative business of looking for oil, rather than pay it, through income taxes, into the Treasury of the United States.

Were it not for the current unsatisfactory character of "profits as reported," producers might take comfort in the fact that with existing prices they might be able to recover the value of past investments, though at a somewhat slower rate than normal because of the lack of price compensation with which to offset the increased operating expenses to which I have referred. But little satisfaction can be gained from considering the matter from this point of view. In the first place producers

may be called upon, though with what unfairness should be shouted from the housetops, to exceed the maximum efficient rate of production of their properties with consequent loss of reserves and without present hope of compensation therefor. If they attempt to avoid the loss of reserves by preventing production from exceeding the maximum efficient rate, while striving to supply additional new oil, they then incur the new higher costs of exploration and development without adequate compensation in the form of higher prices. And if, as they have every right to do, they maintain production at no more than the maximum efficient rate, they find themselves in that unwholesome retrogressive state designated as a liquidation of the business.

Here, if ever, are the horns of a dilemma which has taxed the minds of producers of all sizes in all areas. From the very beginning of the discussion of this perplexing question certain government officials opposed to favorable consideration of the oil man's petition have exhibited a cock-sureness not warranted by the implications of the developing situation. On the one hand it is admitted that currently vast quantities of petroleum are needed to fight the enemy. On the other hand there is no inclination to provide any margin of safety of supply. Can it be that an early termination of the war is expected, which would put an end to the threat of a shortage of petroleum? Moreover, a new argument is now advanced to support the contention that an increase in the price of crude oil will not be needed in order to avoid an impending shortage, namely, increased control of the submarine; and increased availability of tankers. Larger quantities of foreign oil, it is said, could supply a considerable part of the total demand, thus easing the pressure on the American supply. This subject merits more than passing consideration, because a large segment of the public has been convinced that too much United States oil and too little of the oil controlled by our Allies has been employed thus far in fighting the war. The citizens in this segment are sympathetic to any move which would bring about the greater use of allegedly cheap foreign oil. An afternoon could well be spent in a discussion of this aspect of the matter. The subject might be termed "international competition." Attention should be given to the existing tariff on importations of petroleum and its products into the United States. The reason why American producers must be protected and other phases of this subject might be discussed with profit. A conclusion might be reached that American producers should seek to effect such changes in costs as to permit them to operate competitively.

Now it may be that the present emphasis on the use of foreign oil is directed solely to the rigorous administration of the hold-the-line policy. It may be that it is an unwholesome application of the probably unsound concept that the American petroleum reserve is nearing exhaustion. Or it may be that it is part of the administration's attempt to impose upon industry such regulations and directives as to compel it by meeting hard conditions to become internally more efficient. However that may be, it is difficult to fathom the reasons for all of the regulations and directives. Indeed there may not be very good reasons for some of them, at least good reasons in the sense that they are consistent with other regulations and directives and beneficial to the economy as a whole. And this fact brings us down to the subject mentioned at the outset, namely, that the denial of the industry's petition for a crude price increase may be the most significant economic fact of the war.

The subject of the crude price increase has been before the government for many months. It has, so to speak, been pushed about from pillar to post. The need for a crude price increase was denied categorically by the Office of Price Administration even before that agency had the benefit of the industry's and PAW's studies. Undoubtedly the hold-the-line order has greatly stiffened the resistance of the price control authorities to a general petroleum price increase. However, the price of crude oil is a very small fraction of the price the public pays for petroleum products. As a matter of fact the recommended price increase is only about 7 percent of the total average price of products. But it has been impossible to get official Washington to approve this 7 percent. Where have we failed to prove our case? The fact is we have not failed. The failure is the Government's. In its consideration of our petition, it has failed to serve the master called "supply" and has chosen to serve its magnificent obsession called "hold-the-line." Unfortunately throughout the discussion little consideration has been given to the relation between price and supply, though the industry's briefs contain ample support for its affirmation that higher prices would bring greater supply.

Out of all the welter of discussion comes a set of facts that may have more significance for all of you in the long run than a price increase would have in the near term. I mean just this: in the handling of the oil situation, official Washington has demonstrated the difficulty, nay, the impossibility, of effecting a thorough going progressive control of the economy. It has repeatedly proven that it takes many months to make a decision that the automatically operating economy would make smoothly in short order.

I want to give you one additional significant illustration of the inability to gauge the power of initiative inherent in our economy. About two years ago we were told by official Washington that the civilian population should expect to suffer a subsistence level of living in 1943, a level such as existed during the depths of the last great depression. It was to be measured by 49 billion dollars of expenditures for civilian goods. Actually, according to the Department of Commerce, the level of expenditures of the civilian population in 1943 will approximate 92 billion dollars. Even when this larger figure is reduced to adjust for increases in the prices of goods, there will be in 1943 an expenditure of consumers goods of over 76 billion dollars or 27 billion dollars more than the government experts figured it would be. That is, the actual consumption will be more than 55 percent greater than the forecasted consumption. And this, despite an enormous increase in the production of war goods.

Must Fight

And now I come to a final brief statement which is my main contribution. It is the suggestion that the real fight for a return to economic freedom has yet to be fought. In the forthcoming contests, the individual is likely to feel a sense of impotence in the face of powerful federal bureaucracy. He may even become inveigled into an acquiescence to proposals for such uneconomic mechanisms as subsidies, despite the fact that in moments of reflection he may realize that subsidies pave the way to an increasing fascist control over our productive and distributive affairs.

This feeling of individual impotence is, of course, one of the reasons for the vigorous existence of a great trade association like the one under whose auspices this meeting is held. In our business the continued control of our activities by government after the war must inevitably precipitate grave difficulties, more especially in the absence of big discoveries of crude oil with which to satisfy the public need. Nothing would more quickly place us in a governmental straight jacket than aggravated shortage of supply. Foresee also the public ill-will to be heaped upon our industry when under conditions of shortage, the price of petroleum must of necessity increase at a time when the prices of other commodities may be falling from war inflated levels. Here alone is an ample reason for an increase in the price of crude oil in the present in order that the public might be saved from a larger increase in the future. Our fight may well take the form of education. First of ourselves, then of the government personnel, if they will be educated, and of the public.

I am persuaded that the people generally do not see clearly the progress which is dependent upon the free functioning of the competitive system. We may lose in the present fight to obtain governmental recognition of the implications of the trends of important price factors in our business. But if we fight and win this larger battle, our suffering in the present may be small indeed when compared to the gain for the future.

Overlooked Shallow Sands May Hold Important Reserves

By DON L. CARROLL, Staff Writer

IN THE interest of truth most experienced drillers, geologists and others will confess that on numerous occasions, and in many areas, they have drilled through shallow sands and good shows worth setting. Even so, the practice persists, and has for years, notwithstanding universal recognition of the economic waste involved.

To a large extent the widespread application of this practice is blamed on the rotary method of drilling, since the mudding off of porous strata is perhaps the most generally-admitted disadvantage of this method. This is especially true in fields drilled prior to improved coring and logging devices. Today, with electric logging and efficient coring instruments, there is no excuse for not obtaining information on all parts of every hole that might have chances of producing. Considerable blame also can be laid at the feet of the prospector who, in the majority of cases, spuds a well with a definite horizon in mind as the drilling objective. Possible shallow pays are thus deliberately overlooked in the effort to make hole to the desired depth. This practice is all right if full length electric logs are obtained and filed.

The exploration and development of the Illinois Basin area represents one of the most recent and flagrant cases where potential production from shallow Pennsylvanian sandstone was not merely overlooked in most drilling operations, but was not even considered as worth a look, in spite of the fact that lower Pennsylvanian sandstones, sand lenses, "shoestring" channel fillings and littoral traps were important contributors of excellent oil in the older fields of the state. To overlook completely the potentialities of such horizons in exploration of the Illinois Basin seems incomprehensible—the more so because much of the drilling has been done on proved structures, isolated and mapped by geophysics and geology. Almost without exception these fields were explored and developed with the idea of obtaining production from the upper Mississippian Chester sands and the McClosky lime below. Later, the deeper Devonian and Trenton formations came in for drilling attention, with results that were so far short of spectacular in most of the counties of the basin that the continued overlooking of the Pennsylvanian amounts to little less than stubbornness.

The Illinois Basin play was under way for five years before any serious attempt was inaugurated to gain information on the Pennsylvanian strata within it. Previous to that time it was general procedure to begin taking samples of the drill cuttings only after the Pennsylvanian rocks had been penetrated. As a result, the logs of a majority of the wells in the Illinois Basin show nothing except the thickness of these strata—not even rough descriptions of the nature of the sediments. Thus, a vast amount of information has been lost, to the detriment of all concerned.

Current supply situation demands practice of deliberately overlooking shallow zone possibilities, which has resulted in loss of much valuable information, be stopped

The evils of such practices were evident and recognized from the first by the Illinois Geological Survey, but nothing much could be done about the situation until regulatory legislation was enacted. Lacking the authority to secure full data on any or all wells the state scientists were forced to gather it as they could, through the voluntary cooperation of occasional drillers. The situation is different now, and key wells are studied in detail from the surface down, for the ostensible reason of securing information on the depths, thicknesses and general geological conditions pertaining to the commercial coal seams of the state, looking toward their protection and inventorying. State geologists sit on selected wells, living and working in a portable trailer laboratory at the well sites. By sample studies on the spot, log plotting, making drilling time logs and checking coring depths, all desired information is now being secured from the most important holes. Sample study logs, drilling time logs and electric logs are later correlated at headquarters, giving a triple check on geological sequence and structure. Information is thereby procured that is of benefit to both the coal and petroleum industries.

So much for the changed situation; but how about the potential production that has been overlooked in the meantime? Fortunately something can be done about the matter, if responsible leaseholders become interested. In producing fields where possible shallow pays have been disregarded the obvious recommendation is that shallow holes be put down with care and with careful study during drilling operations, followed by equally careful electric logging, core study and saturation tests. Any encouraging results thus secured would automatically result in redrilling or reworking of the area.

Equipment has been developed within the past several years, it will be recalled, that can log the potentialities of a well at all levels, even when the hole is cased and cemented, or otherwise sealed, as far as the rock wall is concerned. The use of such apparatus for re-studying producing or abandoned wells deserves consideration, for older areas where shallow production possibilities have not been given adequate attention. Much new production might be located at small expense.

In summary: every effort should be made to find more shallow production, not only for the sake of greater output for war needs, but from the standpoint of plain economics. Shallow holes are cheaper; they require less man-hours of effort, less expensive equipment and supplies, and less maintenance. If they yield the oil the net result is a gain for the leaseholder, the royalty owner, the refiner and the nation. Further delay in exploring their possibilities can hardly be defended, especially at the present time.

The women

They know that this is war, and that the price of victory will be high. They have sent off their sons, brothers and husbands to the armed forces, and they are coming out of beauty shops and offices, stores and homes, and are taking war jobs in steel mills and shipyards. The deft hands that in peacetime wielded the skillet and the dryer are now managing the boring mill and the welding torch—and to very good effect.

Ever try keeping traffic flowing smoothly in and out of the main entrance of a big steel plant? Ever knock a "hot top" off an ingot? Or rough-bore a gun forging? Or weld a ship's hull? Not women's work? Women are every day doing these and dozens of other jobs in Bethlehem shipyards and steel plants, and doing them superbly.

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Woman "patrolman" at a Bethlehem steel plant. Here is a job calling for plenty of tact and skill! Women are serving on patrol duty at gates, parking lots, offices, and other locations with efficiency and aplomb.

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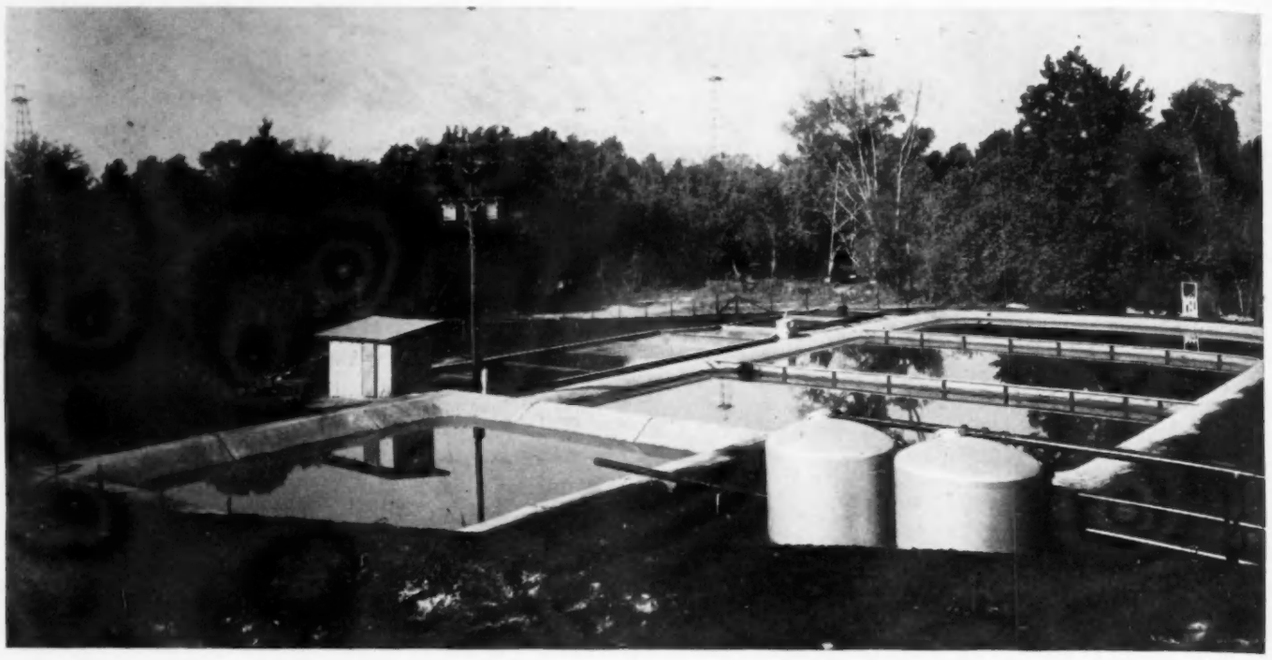

Water Injection Program Benefiting East Texas

Although oil and water production has grown steadily to highest levels in years, only small decline in pressure has been recorded during 1943 — indicating that larger salt water injection rate is having beneficial effects

By R. W. BYRAM, Staff Writer

RISING reservoir pressure in the East Texas oil field during September indicates that the field has a long flowing life ahead if controls in effect now are maintained. The rise of 2.14 pounds in September was preceded by drops of 4.76 pounds in July and 3.76 pounds in August, when total fluid production was less but smaller quantities of water were returned to the producing formation.

The record is more remarkable, however, when studied over a longer period. Since January 1, 1943, the pressure drop has been only 5.11 pounds, despite the fact that daily average production of oil has risen from a low of 324,627 barrels in February to 382,605 barrels in September, an increase of 57,978 barrels daily, or 17.9 percent. During this same period the daily average production of water rose from 340,524 barrels in February to 356,985 barrels in September, a gain of 16,461 barrels, or only 4.8 percent.

During the nine months, despite the fact that production rose constantly (with the exception of the short month of February), the total decline in pressure was only 5.11 pounds, an average decline of .5677 pounds per month. Total production for the period was 95,214,585 barrels, and 18,632,991 barrels of oil were produced for each pound of pressure lost. The average decline per million barrels of oil produced was .0537 pounds.

The secret of this unusual record seems to lie in the salt-water-injection program which has been conducted in the field, together with the water-oil ratio program ordered by the Texas Railroad Commission. Total fluid withdrawals from the reservoir in February averaged 751,444 barrels daily; by September the average had risen to 841,295 barrels, an increase of 89,851 barrels, or 11.2 percent.

THE PICTURE
The John R. Suman salt-water-disposal plant in the East Texas field. Disposal well is in the background. This plant is up-to-date in design and electrically operated.

Salt water injected rose from an average of 102,059 barrels daily in January to an average of 236,855 barrels per day in September. This was a gain of 134,796 barrels, or a gain of 132 percent.

Due to the increased rate of injecting salt water back into the producing formation, there has been a reduction in the net quantity of fluid extracted from the Woodbine sand, although production of both oil and salt water has increased. In February, when the combined production of oil and water totaled 751,444 barrels daily, only 124,754 barrels of water were returned to the sand, leaving a net withdrawal of 626,690 barrels of fluid per day. During September, when oil and water production had increased to 841,295 barrels daily, a total of 236,855 barrels of water were returned to the sand, leaving a net withdrawal of 604,440 barrels per day. Thus, although daily water and oil production had increased 89,851 barrels above Feb-

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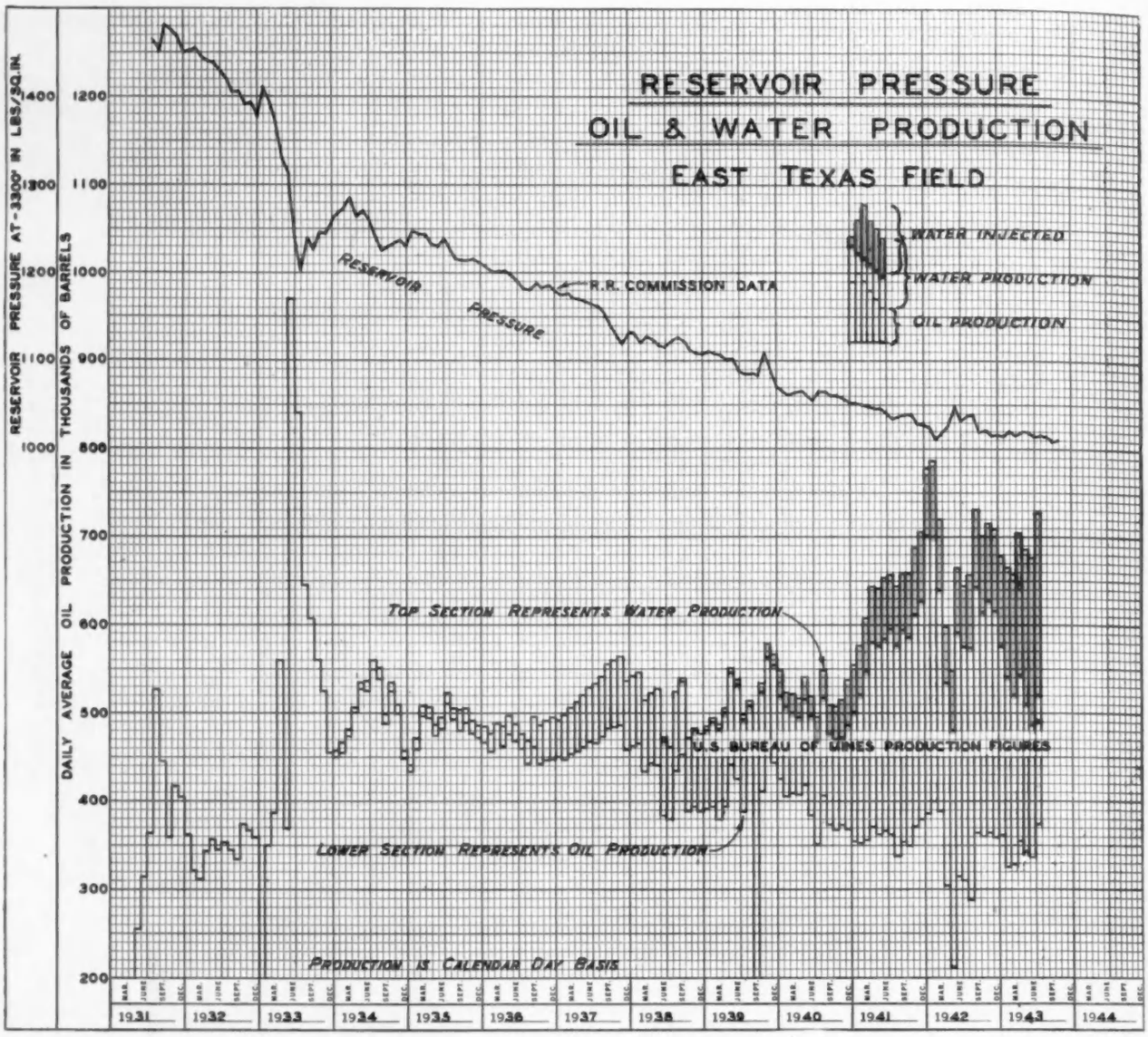

ruary, the higher rate of water injection had reduced the daily net withdrawal rate 22,250 barrels under February.

In order to prevent the production of salt water so far as possible, the Texas Railroad Commission has instituted two plans. Under one plan it is possible to pay for injection in part by "bonus oil." This provides for the production from some other lease of 1 barrel of oil for each 50 barrels of salt water produced from leases with large amounts of water and put into some of the salt-water-injection systems. A maximum of 8 barrels of oil may be produced for the credit of any particular well.

However, as a companion to this program, the commission has in effect another order which forbids the production of more than 5 barrels of water for every barrel of oil produced, unless the excess water is turned into some disposal system for injection. This order, the first of its kind issued, was sustained in a decision handed down in the Third Court of Civil Appeals at Austin on October 6, 1943.

The net result of this program is to encourage, through the bonus payments, injection of water through the various private and public services offered. The ratio order prevents production of large volumes of water by those operators who feel that the bonus is insufficient.

Equally constructive is the operation of the East Texas Salt Water Disposal Company. This company operates as a public utility in the sense that for a specified sum it will take water from any lease to which it is practical to connect and inject it. Stock is owned by many of the operators in the field, and its operation has enabled many of

TABLE 1

Total Fluid Withdrawal and Reservoir Pressure Trend of East Texas Field

	DAILY AVERAGE PRODUCTION—Barrels				Water Injected Per Day Barrels	Net Fluid Withdrawal Per Day Barrels	Reservoir Pressure 1st of Mo. Lbs./Sq.Inch
	Oil (Tanks)	Oil (Reservoir)	Salt Water	Total Fluid			
1943							
January	325,061	411,470	340,839	752,309	102,059	650,250	1,015.71
February	324,627	410,920	340,524	751,444	124,754	626,690	1,020.55
March	325,753	412,345	341,119	753,464	137,064	616,400	1,016.14
April	354,051	448,166	351,721	799,887	160,828	639,059	1,020.44
May	342,759	433,872	342,060	775,932	176,727	599,205	1,019.16
June	334,725	423,702	338,928	762,630	190,992	571,638	1,016.21
July	373,744	473,094	356,414	829,508	208,555	620,953	1,016.98
August	374,189	473,657	356,675	830,332	214,942	615,390	1,012.22
September	382,605	484,310	356,985	841,295	236,855	604,440	1,008.46
October	.....	.....	.....	.....	.....	.....	1,010.60
Total	95,214,585	120,524,790	94,813,925	215,338,715	47,171,146	168,167,569	—5.11
Daily Average	348,771	441,483	347,304	788,787	172,788	615,999	.....

Unretouched photograph 9⅝" casing.

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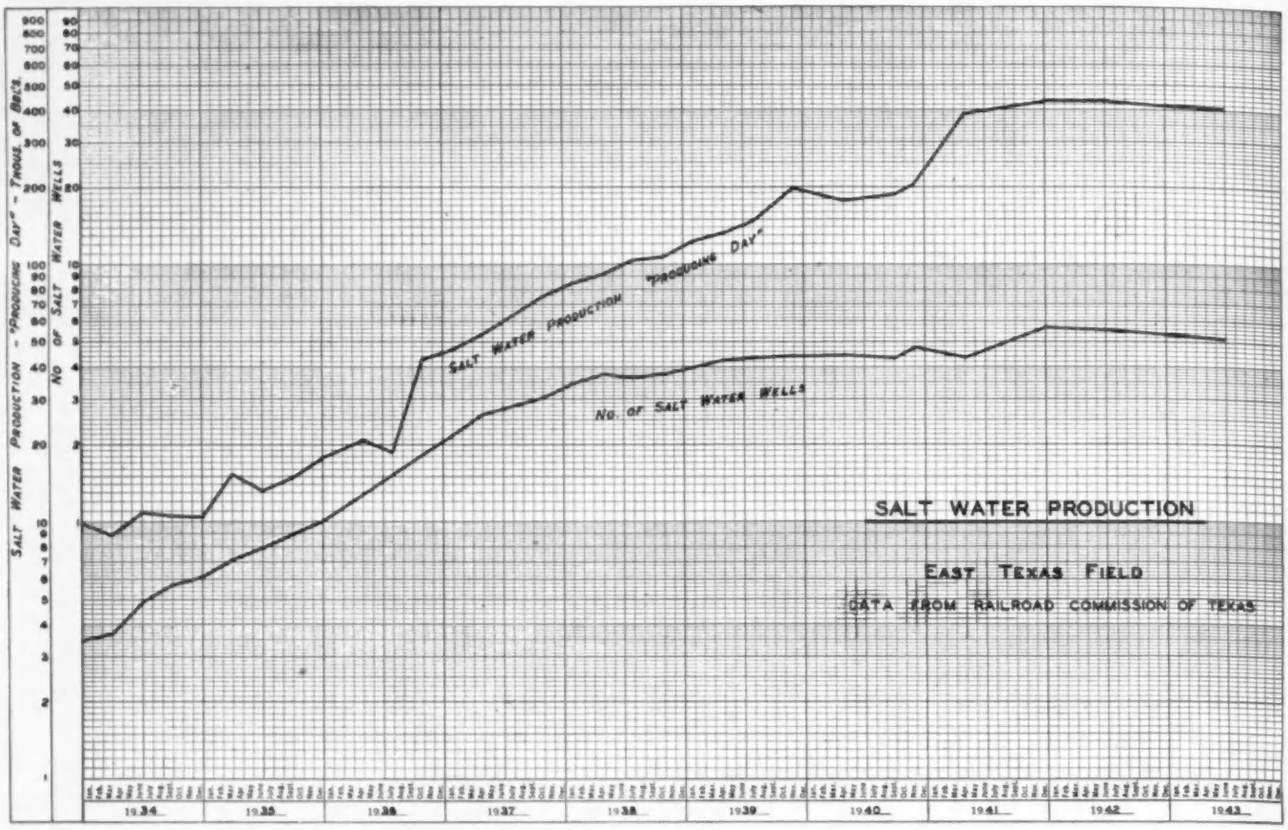

the smallest producers to inject water at a cost which they can afford. Many of the larger companies, of course, have had their own injection systems in operation for several years, a practice which is profitable if the number of wells available is large enough.

The Salt Water Disposal Company is steadily enlarging its facilities. In October of 1942 it injected an average of 2957 barrels per day; this September the average had risen to 145,855 barrels per day, and with new facilities being completed, the average for October should be materially higher.

The disposal company and the private companies injected an average of 236,855 barrels of salt water daily during September, which was 66.3 percent of the total amount of salt water produced during the month.

The railroad commission recently has completed a series of tests of wells producing large volumes of water, most of which are located on the west side of the field. Of the 459 wells tested during September, oil production was reduced 8.97 percent and water production increased 26.2 percent above previous estimates. The result of this series of tests has been to add several wells to the various disposal systems in order to have the water injected and the penalties thus avoided.

There remains to be injected some 65,000 barrels of salt water now being produced each day. Plans for providing these facilities are under way. However, in the event PAW calls upon the field to increase its production materially, more water will be produced and facilities to handle it must be provided if the pressures are to be maintained.

Should the commission decide to take drastic measures, it could reduce the amount of water produced materially by closing in 254 wells in the field which now produce 92,942 of the 356,985 barrels of water produced daily. These wells produce only 1788 barrels of oil, or an average of 7.04 barrels each.

Further than this, if all the water produced by these wells was injected and the bonus oil allowed, the bonus would amount to 1858 barrels daily, or 70 barrels more than the allowable assigned to them.

The 92,942 barrels of water daily amounts to 2,788,260 barrels in a 30-day month. If this was all shut in and the equivalent amount of oil produced, then East Texas could produce 5.61 days more each month than it is producing now. In other words, at the rate of 496,382 barrels daily, the recent scheduled allowable, the field could produce 28 or 29 days each month, instead of 23 days.

Of the 92,942 barrels, 74,447 barrels daily is being injected. Whether all the facilities now needed for this disposal could be made available to other wells is doubtful because of the location of some of the unconnected wells. However, if these wells were closed in, some of the water from other wells could be handled through these systems.

TABLE 2
Salt Water Produced and Injected in East Texas Field

	Salt Water Produced		Salt Water Injected			
	Month Barrels	Daily Average Barrels	Month Barrels	Daily Average Barrels	Percent Injected	Producing Days
1942						
October	11,306,413	364,723	2,697,220	87,007	23.85	22
November	10,601,370	353,379	2,667,973	88,932	25.16	21
December	10,894,601	351,438	2,954,901	95,319	27.12	22
1943						
January	10,566,019	340,839	3,163,849	102,059	29.95	20
February	9,534,664	340,524	3,493,127	124,754	36.64	18
March	10,574,693	341,119	4,248,994	137,064	40.18	20
April	10,551,621	351,721	4,824,863	160,828	45.73	21
May	10,603,855	342,060	5,478,541	176,727	51.67	21
June	10,167,760	338,928	5,727,688	190,992	56.35	20
July	11,048,844	356,414	6,465,220	208,555	58.51	23
August	11,056,911	356,675	6,663,214	214,942	60.26	23
September	10,709,558	356,985	7,105,650	236,855	66.35	23
Total (12 Months)	127,616,309	349,634	55,509,791	152,082	43.50	..

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Effect of Temperature and Vapor Pressure of Oil Upon Volumetric Pumping Efficiency

This article, which shows that the volumetric efficiency of a pumping well decreases slightly as the temperature of the oil increases, is an abstract from the progress report entitled "An Experimental Investigation of Volumetric Efficiency of Sucker Rod Pumps," which was presented at the American Petroleum Institute Mid-Continent District Spring Meeting in Tulsa, May 20-21, 1943

By GLENN M. STEARNS
Associate Professor of Petroleum Engineering, University of Oklahoma

TESTS conducted with an experimental well hook-up, that simulates actual conditions as nearly as possible, have been made that show a slightly decreasing volumetric efficiency of a pumping well as the temperature of the oil is increased. This trend, indicated by the plotted results shown, is believed to be the result of the lower viscosity of the oil at the higher temperatures, thus causing increased slippage of the fluid past the plunger. Aside from this factor, investigation was conducted into a possible change in plunger fit (resulting from a difference in coefficients of thermal expansion of the stainless-steel plunger and cast-iron liners) effecting efficiency; also whether or not the increased vapor pressure at the higher temperatures caused lower efficiency.

Judging from the data obtained in Series A and B, there was no evidence that the third factor mentioned above had an appreciable effect, since decreased volumetric efficiency due to higher vapor pressure should be evidenced by compression of gas between the valves at the beginning of the downstroke. No such indication could be found from a study of indicator diagrams taken during the tests of these two series.

Study of the two indicator diagrams of Figure 1 reveals evidence of additional slippage by the plunger at higher temperatures. Card No. 1 was taken during the first run of Test No. 9 of Series A with the oil temperature at 52° F. Card No. 2 was taken during the third run of the same test with the oil temperature at 145° F. It will be noted that the volumetric efficiency of the pump with an oil temperature of 52° F. was 99.32 percent, while with the oil temperature at 145° F. the volumetric efficiency was 92.21 percent. Analysis of the card taken at the lower temperature reveals that following the large pressure fluctuations at the beginning of the upstroke the pressure was constant at 35 pounds per square inch (submergence pressure) during the remainder of the upstroke. On the other hand, the card taken at the higher temperature shows that the pressure waves did not smooth out until a higher point was reached on the upstroke; and at this time the pressure in the intra-valve space was 50 pounds per square inch and gradually declined during the remainder of the upstroke until the casing pressure of 35 pounds per square inch was reached near the top of the stroke. This characteristic of the higher-temperature card is interpreted as indicating leakage by the plunger.

As to the effect of differential expansion of the plunger and liners, it is believed that this would cause a

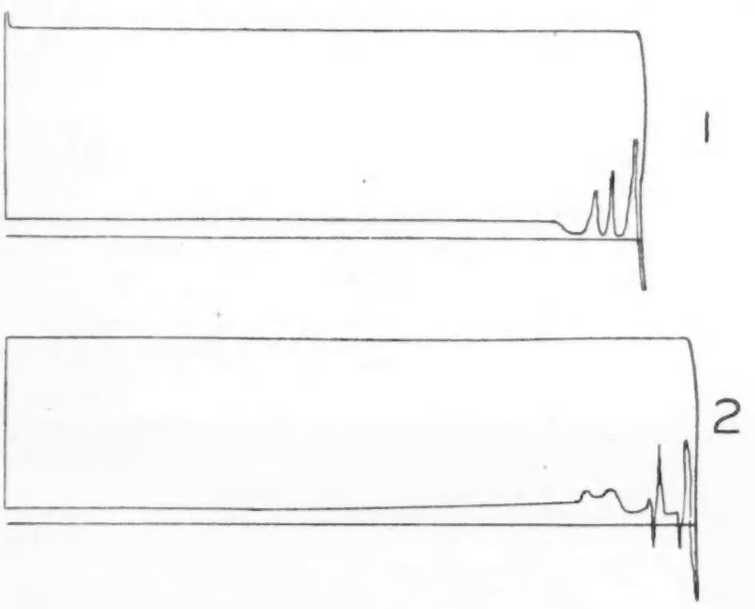


FIGURE 1

Indicator diagram showing evidence of greater slippage past plunger at higher pumping temperatures.

Card No. 1: Oil temperature 52. Card No. 2: Oil temperature 145.
(Left-hand side of card is top of stroke; right-hand side of card is bottom of stroke.)

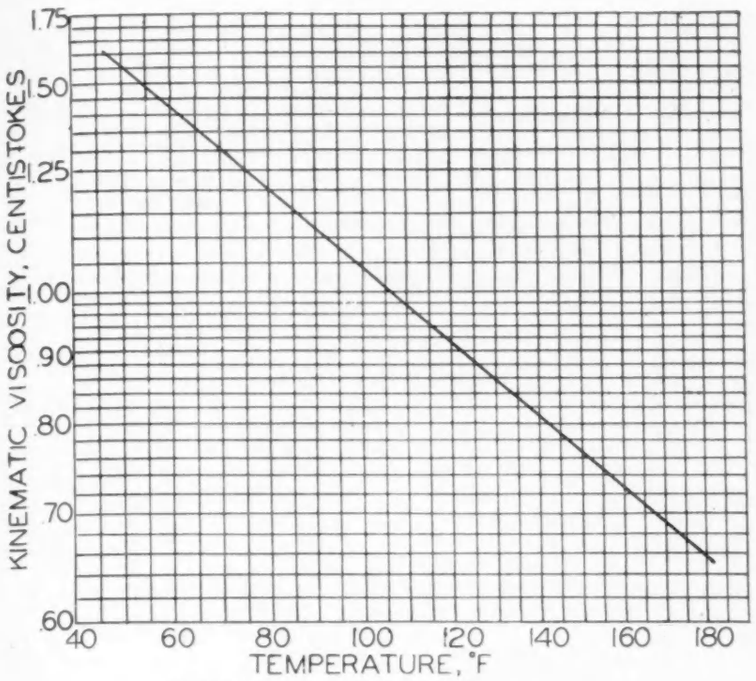


FIGURE 2
Viscosity-temperature chart of oil used in test series A and B.

closer fit of the plunger at the higher temperature, since the coefficient of thermal expansion for stainless steel is in general higher than that for cast iron. So, such expansion would partially annul the effect of additional leakage due to reduced viscosity of the oil. It should be pointed out, however, that no data have been obtained regarding the exact composition of the steel and cast iron of the plunger and liners used on the test in order to accurately evaluate the coefficients of expansion of the two materials.

At any rate, it is concluded that the slight decrease in volumetric efficiency observed at the higher temperatures when using the oil of low vapor pressure (Series A and B) was due principally to additional leakage past the plunger because of lower viscosity of the oil at elevated temperature. It will be noted from the temperature-viscosity curve of Figure 2 that the viscosity of this oil is 1.53 centistokes at 52° F. and 0.785 centistokes at 145° F.

It will be noted from the plotted points of Figure 3 that the volumetric efficiency of the pump for a given temperature was slightly lower, in general, than that observed for the same temperature in the testing of Series A with the low-vapor-pressure oil. This difference in efficiency was expected because of the change in the vapor pressure of the oil. Analysis of indicator diagrams from this series shows no aspects appreciably different from those observed in connection with Series A, however.

Examination of the plotted points of Figure 3 shows that the volumetric efficiency dropped off sharply at the higher temperatures when using the oil of high vapor pressure (Series D). Extra testing was carried out along this line to determine more accurately the cause of this sharp reduction in efficiency. While pumping at a constant speed, maintaining a constant submergence pressure (as nearly as possible) and a constant tubing pressure above the plunger, the oil was gradually heated and indicator cards were taken to obtain the pressure changes between the valves of the pump at close increments of temperature. Cards and related data obtained in this way at a speed of 23.8 strokes per minute, a casing pressure of 20 pounds per square inch (+ or —) and a tubing pressure of 425 pounds per square inch are shown in Figure 4. The vapor pressures shown were read from a curve prepared from

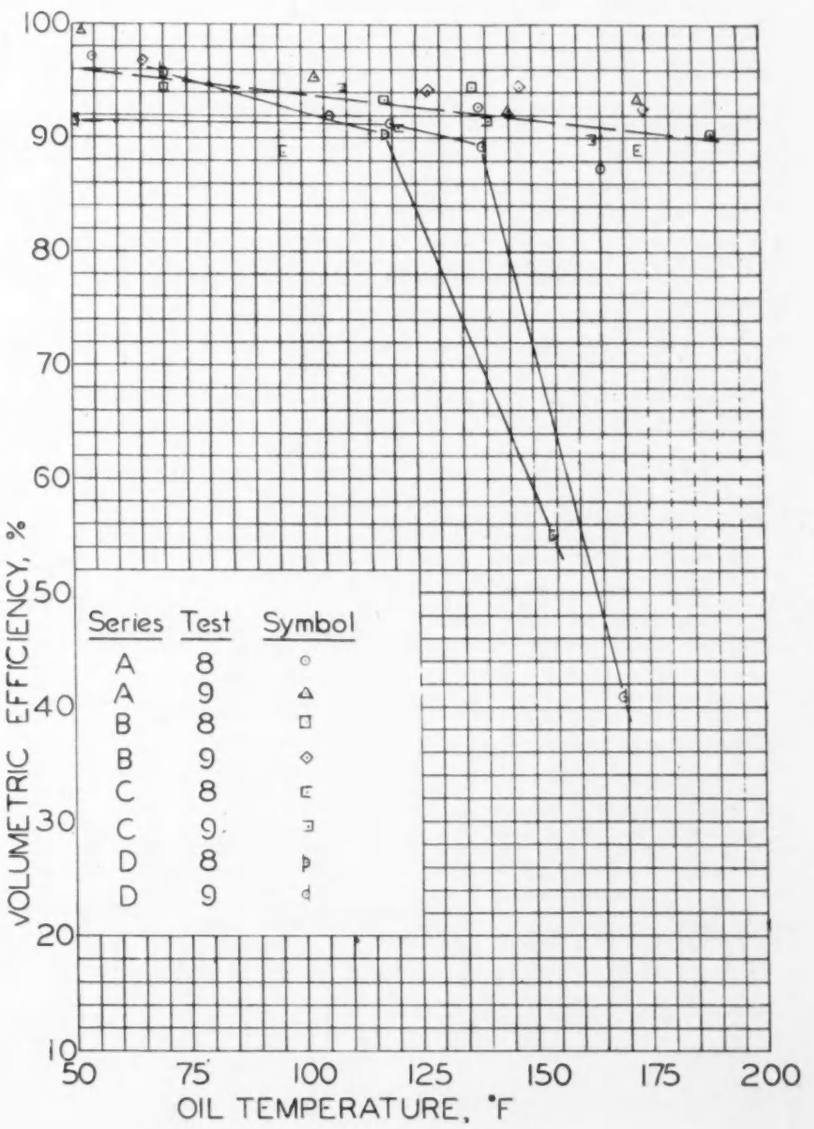


FIGURE 3
Plotted points showing effect of oil temperature upon volumetric efficiency of pump.

Summary of Data from Test Series A

Data common to all test runs:

Length of test run, minutes 30
Frequency of readings, minutes 5
Length of plunger stroke, inches 43⅝
Diameter of plunger, inches 2¼
Length of gas anchor, inches 96
Size of standing valve ..... 2¼-inches, regular (1½-inch ball, 1¼-inch seat bore).
Fluid used—Naphtha without lighter fractions added.

Test No.	Pumping Speed, s.p.m.	Casing Pressure, Lbs. per Sq. In.	Tubing Pressure, Lbs. per Sq. In.	Valve Spacing, In.	Diameter of Gas Anchor, In.	Oil Temperature, °F.	Pumping Rate, Bbl. per 24 Hr.	Pump Displacement, Bbl. per 24 Hr.	Volumetric Efficiency, Percent
8	12.20	35	425	2⅞	1½	54	305.15	314.01	97.18
8	9.60	35	425	2⅞	1½	106	227.95	247.95	91.93
8	10.57	35	425	2⅞	1½	138	252.62	272.06	92.85
8	9.10	35	425	2⅞	1½	165	203.87	233.36	87.36
9	23.10	35	425	2⅞	1½	52	590.54	594.56	99.32
9	22.20	35	425	2⅞	1½	103	544.94	571.40	95.37
9	22.90	35	425	2⅞	1½	145	542.69	588.56	92.21
9	22.30	35	425	2⅞	1½	173	534.63	573.12	93.28

Summary of Data from Test Series B

Data common to all test runs:

Length of test run, minutes 30
Frequency of readings, minutes 5
Length of plunger stroke, inches 43⅝
Diameter of plunger, inches 2¼
Length of gas anchor, inches 96
Standing Valve: From 1-inch insert pump (¾-inch ball, ⅝-inch seat bore)
Fluid used—naphtha without lighter fractions added.

Test No.	Pumping Speed, s.p.m.	Casing Pressure, Pressure, Sq. In.	Tubing Pressure, Pressure, Sq. In.	Valve Spacing, In.	Diameter of Gas Anchor, In.	Oil Temperature, °F.	Pumping Rate, Bbl. per 24 Hr.	Pump Displacement, Bbl. per 24 Hr.	Volumetric Efficiency, Percent
8	9.53	35	425	5½	1½	70	231.70	245.38	94.41
8	13.63	35	425	5½	1½	118	327.31	350.92	93.27
8	11.63	35	425	5½	1½	137	283.25	299.44	94.59
8	9.80	35	425	5½	1½	189	227.57	252.25	90.22
9	23.40	35	425	5½	1½	66	583.83	602.29	96.94
9	22.93	35	425	5½	1½	128	555.65	590.30	94.13
9	22.83	35	425	5½	1½	147	554.93	587.73	94.42
9	23.00	35	425	5½	1½	174	548.75	592.02	92.69

Summary of Data from Test Series C

Data common to all test runs:

Length of test run, minutes 30
Frequency of readings, minutes 5
Length of plunger stroke, inches 43⅝
Diameter of plunger, inches 2¼
Length of gas anchor, inches 96
Size of standing valve ..... 2¼ inches, regular (1½-inch ball, 1¼-inch seat bore)
Fluid used—naphtha with lighter fractions added.

Test No.	Pumping Speed, s.p.m.	Casing Pressure, Lbs. per Sq. In.	Tubing Pressure, Lbs. per Sq. In.	Valve Spacing, In.	Diameter of Gas Anchor, In.	Oil Temperature, °F.	Pumping Rate, Bbl. per 24 Hr.	Pump Displacement, Bbl. per 24 Hr.	Volumetric Efficiency, Percent
8	11.60	35	425	4	1½	96	265.29	298.57	88.85
8	10.90	35	425	4	1½	121	265.31	280.55	91.00
8	12.03	35	425	4	1½	173	275.52	309.64	88.98
9	23.20	35	425	4	1½	109	563.95	597.14	94.44
9	23.40	35	425	4	1½	141	550.94	602.29	91.47
9	23.40	35	425	4	1½	163	541.06	602.29	89.83

Summary of Data from Test Series D

Data common to all test runs:

Length of test run, minutes 30
Frequency of readings, minutes 5
Length of plunger stroke, inches 43⅝
Diameter of plunger, inches 2¼
Length of gas anchor, inches 96
Size of standing valve: From 1-inch insert pump (¾-inch ball, ⅝-inch seat bore).
Fluid used—naphtha with greater proportions of lighter fractions than for Series C.

Test No.	Pumping Speed, s.p.m.	Casing Pressure, Lbs. per Sq. In.	Tubing Pressure, Lbs. per Sq. In.	Valve Spacing, In.	Diameter of Gas Anchor, In.	Oil Temperature, °F.	Pumping Rate, Bbl. per 24 Hr.	Pump Displacement, Bbl. per 24 Hr.	Volumetric Efficiency, Percent
8	9.73	35	425	3¾	1½	70	223.91	250.67	89.02
8	9.90	35	425	3¾	1½	118	230.40	254.81	90.42
8	9.80	35	425	3¾	1½	154	138.77	252.24	55.09
9	23.67	35	425	3¾	1½	51	557.57	609.16	91.53
9	23.50	35	425	3¾	1½	119	551.90	604.87	91.24
9	23.83	35	425	3¾	1½	139	547.58	613.45	89.26
9	23.73	35	425	3¾	1½	169	250.22	610.87	40.96

a laboratory test made the same day that the indicator cards were taken. It will be noted from card No. 1 that at an oil temperature of 100° F., the rise from submergence pressure to tubing pressure at the top of the stroke was instantaneous. On card No. 2, taken at 105° F., there is slight evidence of gas compression at the beginning of the downstroke as indicated by the dotted line erected perpendicular to the atmospheric line through the point at which tubing pressure was attained in the space between the valves. By measuring the length of that portion of the atmospheric line to the right of this dotted perpendicular and dividing by the total length of the atmospheric line, the **indicated volumetric efficiency** was obtained. It will be noted that the indicated volumetric efficiency declined rapidly as the oil temperature was increased.

A similar test was made while maintaining the submergence pressure at 35 pounds per square inch. The cards were similar in general contour to those obtained at a submergence pressure of 20 pounds per square inch, so they are not reproduced in this report. A plotting of indicated volumetric efficiency versus vapor pressure of the oil, from the results of these two tests, is shown in Figure 5.

It is interesting to note from Figure 6 that the indicated volumetric efficiency of the pump dropped off sharply at very near to the point at which the vapor pressure of the oil was equal to the submergence pressure on the pump. It should also be noted that a slight additional increase in vapor pressure of the oil caused the pump to gas-lock and handle no oil at all. Testing in this range of temperature, i.e., where the oil vapor pressure slightly exceeded the pump-submergence pressure, indicated erratic action of the pump. In other words, while the temperature and other controlled factors were constant the pump would gas-lock for several strokes and then pump for a few strokes at a low indicated efficiency.

These results from Series D suggest that it is impossible to pump oil from a well with a reasonably high pump efficiency using the ordinary sucker rod pump, if the vapor pressure of the oil exceeds the submergence pressure on the pump. Further, it leads one to believe that better pump action can possibly be obtained on certain low fluid level wells by providing some means of lowering the vapor pressure of the oil entering the pump. To say the least, these test results emphasize the importance of placing a pump as near the bottom of the hole as possible in order to have a maximum submergence pressure.

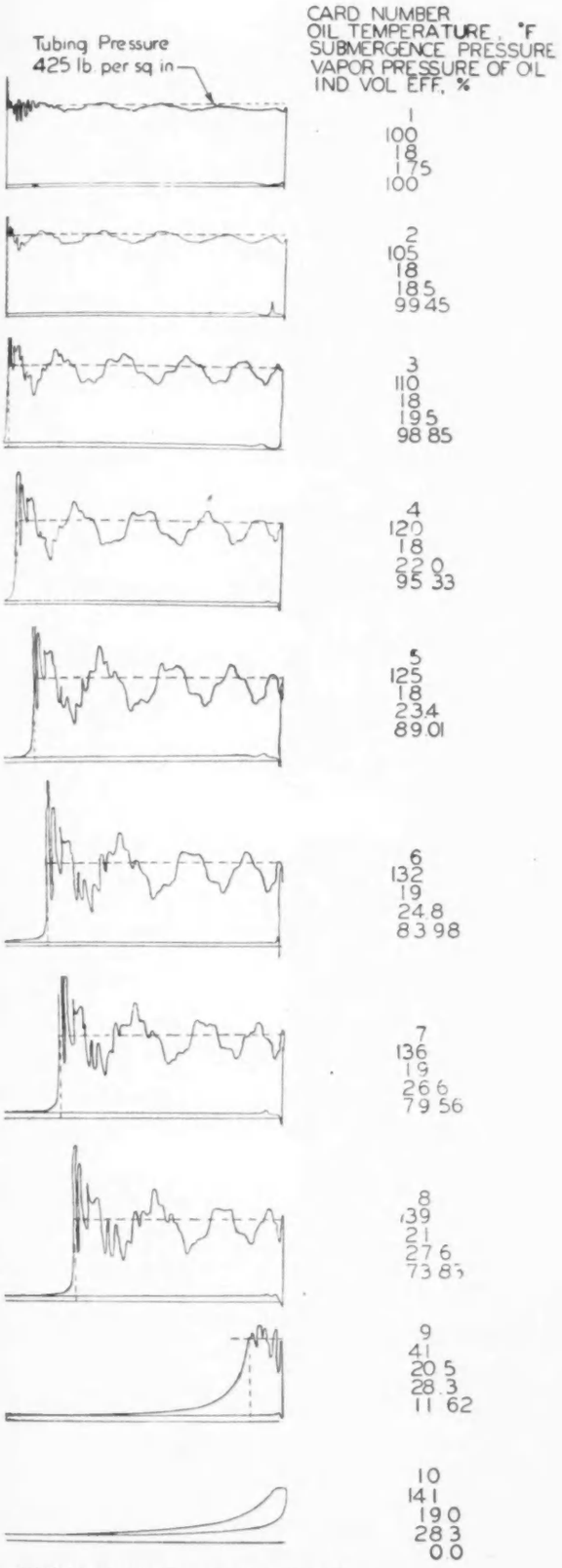


FIGURE 4

Indicator diagram showing decrease in indicated Volumetric Efficiency resulting when vapor pressure of oil was increased by raising the oil temperature.

Left end of card represents top of stroke; right end, bottom. Horizontal dotted line is pressure held above plunger. Vertical dotted line represents point at which plunger struck oil level on down stroke.

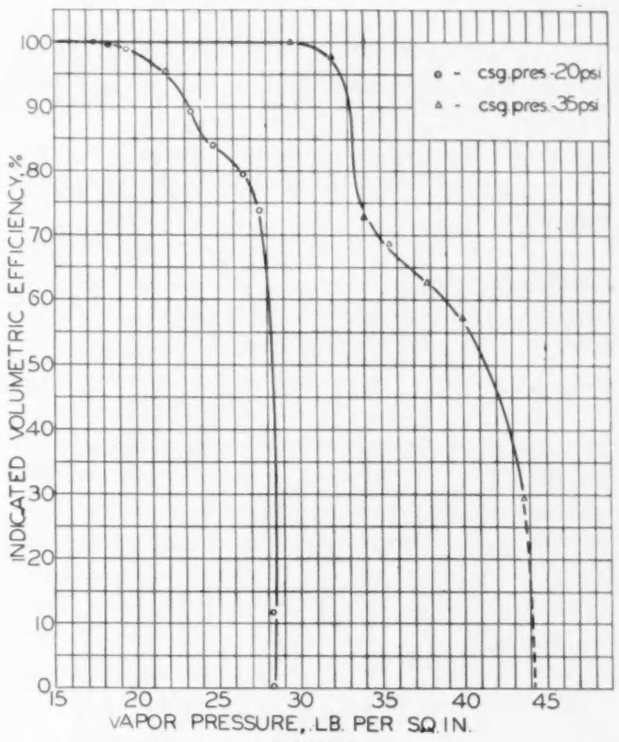


FIGURE 5

Curves showing effect of oil vapor pressure upon volumetric efficiency at two different submergence pressures.

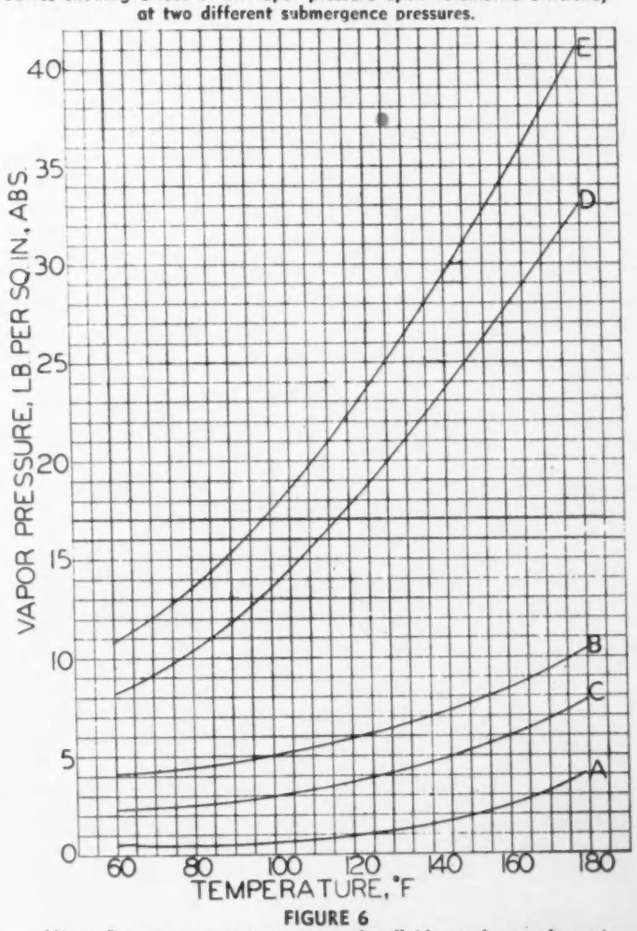


FIGURE 6

Vapor Pressure-temperature curves for fluids used on volumetric efficiency tests.

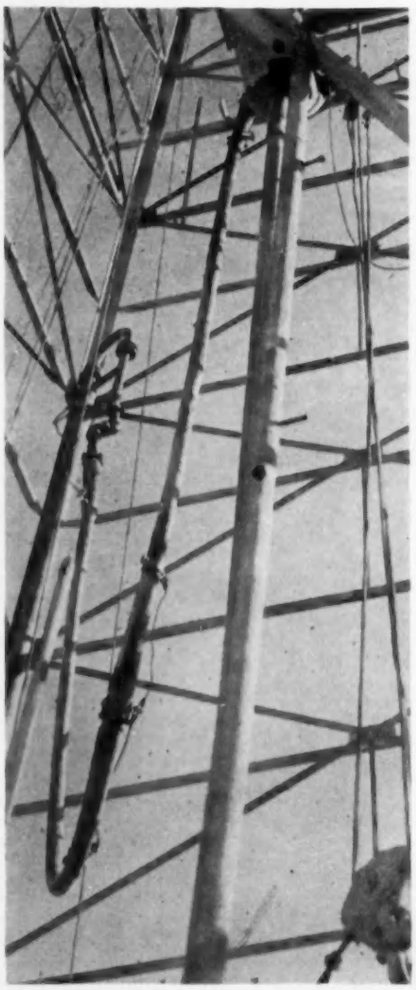
Curve A: oil used in Series A and B; Curve B: upper limit of vapor pressure for oil used in Series C; Curve C: lower limit of vapor pressure for oil used in Series C; Curve D: lower limit of vapor pressure for oil used in Series D; Curve E: upper limit of vapor pressure for oil used in Series D.

PRACTICAL OPERATING *Hints* FOR THE DRILLING RIG

$5.00 will be paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, *Houston.*

1. ROTARY HOSE

Added Flexibility Protects Couplings



Full swing joint at standpipe connection provides maximum sweep for hose end travel.

LIFE of rotary hose depends on many factors, one of them being the amount of flexing or deviation from the straight line imposed on the hose near the point of attachment to the coupling. The more severe the angle through which the hose is bent at this point, the greater the likelihood of premature failure there.

One drilling contractor installs a single full 180-degree swivel joint at the junction of hose and standpipe, with the swing set so that it will follow the path of the hose as tne swivel is pulled toward the crown block.

Installation of the swivel at this point has the effect of increasing the working length of the hose by the amount of slack formerly required to permit the coupling to maintain its initial alignment with the standpipe fitting, without imposing excessive side pull on either. The device allows the entire end of the hose to follow the upward travel of the swivel, until the mud line may extend nearly straight from pipe to gooseneck.

2. STEAM LINES

Full Loop Absorbs Expansion Stresses

PROTECTION of equipment from stresses set up by expansion of high-pressure steam lines is especially necessary now, due to delay or impossibility of getting replacements. One drilling contractor protects his rig equipment by setting a full 360-degree loop in the steam line, the loop being flanged into the line at both ends to facilitate quick setting-up.

The loop is normally installed in the line so that any condensation occurring therein is carried around the loop by steam flow and gravity toward the point where it can be removed by a trap. Usually supported only at the ends and across the diameter at right angles to them, the line is free to travel across itself and to afford total changes in steam main length of several inches without overstressing connections at either end.

Insulating the line on both sides of the loop—which necessarily must remain bare on account of frequent changes in loop diameter—conserves steam and results in its reaching the engines as dry as possible.

3. RIGGING-UP

Quick-acting Units Insure Guy Tension

SLIM-HOLE or A-frame mast-type drilling derricks utilize the guy system as a definite portion of the structure, and require the maintenance of the correct tension in all guys if one section is not to be overloaded when picking up lifts close to the capacity of the rig.

One contractor replaces the customary turnbuckles in these guys with ratchet lifts, so installed that when fully extended they will permit full adjustment of the compression member of the rig to meet anticipated conditions, and with chain to insure sufficient take-up to absorb any sag or slack in the guy at the time of derrick erection.

The ratchets are installed with the handle end uppermost, so as to allow a full swing of the lever when taking up slack, and to protect the mechanism as much as possible from becoming filled with mud or water.

The change from turnbuckles to

Heavy anchorages and reinforced steam joints are eliminated through expansion loop for absorbing changes in main length during normal drilling operations.

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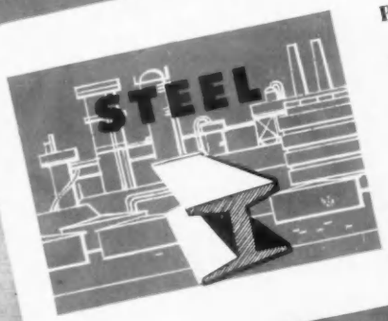
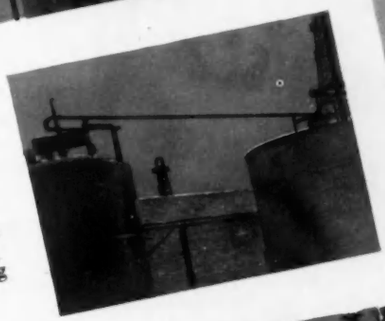


Petreco Electric Dehydrators are self-contained units, with emulsion resolution, water separation, and settling actions taking place in one tank, conserving tankage.



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Ratchet tighteners permit rapid take-up of slack when slim-hole rig is to assume heavy loads.

ratchet units has been found to save time when moving in, and to provide for proper guy tension, even when actuated by men unfamiliar with derrick maintenance. The ratchet, with handle always in place, permits instant adjustment, while it was usually necessary to search for a bar to operate the turnbuckle, or in an emergency, to improvise one from some part of derrick equipment not intended for such use.

4. FUEL SUPPLY

Auxiliary Tank Prevents Shut-downs

TO MAINTAIN uninterrupted operation of a Diesel-powered mud pump, a company using a slim hole drilling unit employs a common oil drum as auxiliary fuel tank. Two-inch pipe posts, to which saddles are welded to fit the contour of the drum, are set in sockets welded to the frame of the pump. A small diameter pipe is connected to the outlet of the drum and to the filler connection of the regulation tank so that the operator can replenish the fuel by opening a gate valve.

The content of the auxiliary tank is checked when the fuel truck replenishes the supply in the operating unit and, being maintained at full capacity, affords ample supply for an extended run of the engine even if the normal fuel delivery is delayed or interrupted.

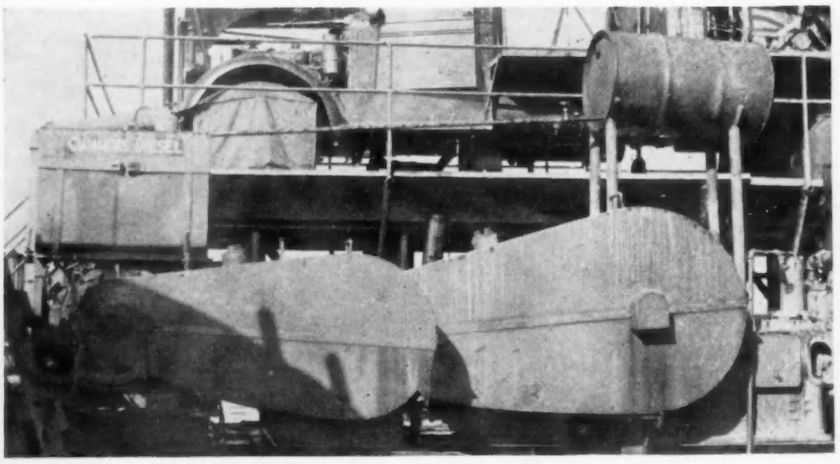
By setting the emergency unit slightly above the usual fuel tank, the extra fuel may be flowed into the lower unit and the suction characteristics of the fuel system thus left unchanged, eliminating possible difficulty through sudden adjustments at pump suction.

5. LUBRICATION

Oil Bath Prevents Wastage of Grease

WHEN filling the barrel of a pressure gun by inserting the open end into a pail of lubricant, the act of pulling up on the plunger tends to draw the barrel further into the soft grease; with the result that, when the the barrel is removed, the outside of the case is smeared with a coat of lubricant. Not only is this surplus lubricant wasted, but wiping rags are unnecessarily lost as they are rendered useless for other service when grease-saturated.

To prevent the gun from being coated with grease, it is required only that the outside surface, instead of being clean, is oily. With the plunger at the bottom of its travel, placing the lower end of the barrel in light lubricating oil, and then allowing the excess to drain off before charging the unit, results in a gun free from adhering grease, and from which the oil may be wiped without requiring several rags.



Drum mounted above mud pump provides storage for emergency fuel when stock in normal unit becomes exhausted. Unit gravitates into running tank to avoid fuel pressure shift.

☆ ☆ ☆ ☆ WASHINGTON ROUNDUP ☆ ☆ ☆ ☆

CONGRESSIONAL attention again was centered on oil matters last week, with the opening of a new series of hearings by the oil group of the House Interstate and Foreign Commerce Committee and floor debate in the House on price and the Fort Norman development project.

Opening a series of hearings which he said eventually would touch upon all of the major subjects of controversy, Chairman Lea of the oil subcommittee heard a strong defense of PAW activities from Deputy Administrator Ralph K. Davies, coupled with a warning that the supply situation will become progressively worse and within a year may be highly critical unless the finding of new fields is spurred by a price increase for crude oil.

Davies also discussed the possibilities of increased production in the Caribbean and Middle East, but cautioned against looking to those areas for relief in this country unless and until there is an adequate supply of tankers and the sea lanes have been rendered safe.

During the week WPB issued the revised and simplified P-98-b drafted by PAW, designed to clarify the regulations covering the granting of priorities assistance. No major changes in regulations were incorporated in the order, but definitions were expanded and made more specific and its provisions were re-worded where necessary for clearer understanding.

New Simplified P-98-b Issued

Davies Explains Oil Picture To House Committee

Price and Fort Norman Project Discussed on House Floor

By B. F. LINZ
Washington Correspondent

☆ ☆ ☆ ☆

P-98-b Redesigned to Make Provisions Easier to Understand and Apply

The War Production Board on October 19 issued the long-awaited revised Preference Rating Order P-98-b, covering the priorities assistance to be given the industry to secure materials for operation.

The new order, designed to simplify the regulations, was prepared by PAW, in line with its policy of redesigning all oil orders to make them more understandable and easier of application.

The new P-98-b is considerably more detailed than its predecessor orders. All operators in the United States and Canada are covered by the order which, however, will not be used by foreign operators, who will continue to use Priorities Regulation No. 9, or for the securing of material to be used in Hawaii, which may be obtained through the procedure established by the WPB regional office for Region X.

The order sets for the separate procedures to be followed to secure materials for maintenance and operating repair purposes, operating supplies and laboratory equipment; material for most production activities, which include exploratory work and well drilling; and materials for use in special production operations, natural gasoline recovery, transportation, refining and marketing.

A companion order—Petroleum Administrative Order No. 15—was issued by PAW, controlling the use of materials by refiners and transportation operators.

Definitions of the various terms used in the order include the following new interpretations:

"Maintenance and repair does not include (a) the deepening, redrilling, or plugging back of any well or the initial installation on any well of pumping or other artificial lifting equipment, or (b) any use of material in connection with a service station or retail outlet other than for upkeep or restoration purposes, or (c) the installation or replacement in marketing of any 'equipment' as defined in Petroleum Administrative Order No. 12.

"Operating supplies means any material other than material used for maintenance and repair which is essential to and consumed in the petroleum industry and which is normally carried by an operator as operating supplies or which is normally chargeable to operating expense."

The provisions covering the extension of priorities assistance for maintenance, repair and operating materials have been greatly extended with a view to covering all questions which may arise in operators' minds in making applications.

Dates for filing PAW Form 35 (replacing WPB 2565) were changed. Operators drilling more than 40,000 feet of hole in 1942 are required to file such applications at least three months prior to the beginning of the calendar quarter in which the controlled materials are to be delivered.

Operators who drilled less than 40,000 feet of hole last year will continue to file their applications at least one month prior to the proposed delivery date of the controlled materials, but if he is able to plan his operations far enough in advance he is urged to file three months prior to the beginning of the calendar quarter in which the materials are to be delivered, "or as far ahead of the commencement of such quarter as possible."

Certain special operations in connection with production were excluded from the production procedures. An operator who desires to secure material for use in connection with gas cycling, gas desulphurization, gas dehydration, or pressure maintenance operations or in connection with a plant for gas lift compressor or gas booster operations having a rated capacity exceeding 500 horsepower must file a project application on PAW Form 30 (replacing WPB-617), or use Form WPB-541 to secure such materials.

To obtain ratings on items listed on WPB's List B of Priorities Regulation No. 3, operators must follow a special delivery order filing procedure, requiring that all delivery orders be cleared through the PAW Washington office for aproval prior to placement with a supplier. Previously, ratings were obtained by filing PD-1-a and other forms before orders were placed.

PAO No. 15 is comparable to PAO-12, which regulates the use of materials by marketers and PAO-11 which regulates the use of materials by oil and natural gas and natural gasoline producers. The new order contains provisions formerly in P-98-b to control use of materials by the refining and transportation branches.

Also covered is petroleum gathering and movement, including crude gathering lines. With respect to gathering and movement, material may be used:

For maintenance and repair purposes, as operating supplies or for laboratory equipment or its installation without restriction.

For the construction, installation or extension of (or any other similar use of material in connection with) a crude-oil gathering line from the first valve on the discharge side of the lease or field shipping tank or battery where petroleum is first gauged to any other petroleum gathering and movement facility or any refining facility, if (1) the material cost of any one complete operation is $3,000 or less; (2) the cost of material originally obtained for maintenance and repair purposes through the use of priorities assistance, used in any single operation, does not exceed $500; and (3) the line does not duplicate in whole or in part the transportation functions of any existing line or lines.

For any construction, expansion, extension, improvement, installation, reconstruction, remodeling or other simi-

Full Text of New P-98-b on Page 38.

lar operation in petroleum gathering and movement or in refining, if (1) the material cost for any one complete operation is $3,000 or less; (2) the cost of material originally obtained for maintenance and repair purposes through the use of priorities assistance, used in any single operation does not exceed $500; and (3) the operation does not include any use of material in connection with a crude-oil gathering line.

Where priorities assistance is necessary to obtain more than $500 worth of material for any single operation, all priorities assistance must be obtained by filing PAW Form 30 or Form WPB-541.

President "Courteously Silent" on Crude Price Raise

A personal appeal by Governor Kerr of Oklahoma for a substantial increase in the price of crude oil met with "courteous silence" on the part of the President October 19.

Following a visit to the White House, Kerr said he presented the oil situation to the President, who he added, "listened courteously" and then remained "courteously silent."

The oil-price problem was the subject of extended debate in the House of Representatives on the same day, with members from the consuming states evidencing as much concern over the situation as those from the producing areas.

The matter was brought up by Representative Gossett of Texas, who explained again the declining new discoveries and the falling off in wildcatting because of low crude prices, pointing out that Bureau of Labor Statistics figures on average wholesale prices last June showed that crude oil was at the bottom of the list, with an index of 59.2 in the Mid-Continent field, 79.7 in Pennsylvania and 85.2 in California, based on 1926.

Gossett brought up the heavy military demand expected in 1944, agreeing with Representative Rees of Kansas that the only way to get the necessary increase in production is by a price raise, and asserted, in response to a question as to his opinion on a subsidy, that such a method "is fraught with many evils."

"Even if wildcatting were subsidized," he explained, "it would not touch the problem of the marginal wells. Subsidies will not have anything to do with stripper production. We will still lose that, notwithstanding a subsidy program. Frankly, I do not believe that a subsidy program will get the job done. I think that is the wrong approach to the problem."

Also involved in the debate was the alleged effort in some quarters to import oil rather than develop our own resources.

Asked by Representative Rivers of South Carolina whether he did not believe that effort is being encouraged by "some people in high places," Gossett replied:

"I am afraid there is something to what the gentleman has to say on that point. I know he is entirely correct in his statement that the small independents are being squeezed out of the picture under the present crude prices. Unless these independents can be kept on their feet the oil business in America will become a gigantic monopoly controlled entirely by the major oil companies."

Davies Details Oil's War Problems and Accomplishments to House Committee

"We no longer have enough oil in the United States to go around, and the reason we do not have it is that such prodigious amounts are required for war," the oil subcommittee of the House Interstate and Foreign Commerce Committee was told October 21 by Ralph K. Davies at the opening of a new survey of the petroleum situation.

Calling Davies to the stand, Chairman Clarence F. Lea explained that the hearings was the first of a series to be held from time to time until all of the important subjects of controversy relating to oil have been touched upon.

Supported by the heads of the various PAW divisions, who answered questions falling within their particular fields as the hearing progressed, Davies entered a lengthy defense of what PAW has done to meet the oil problem.

Production and refining are both at all-time high levels, he said, and capable of little further expansion unless new fields are brought in and new refineries put on stream.

Transportation has been licked, but civilian gasoline consumption continues to run above certifications by nearly 50,000 barrels a day which, because PAW has allocated all of the gasoline that is being produced, has to come out of the already low stocks.

Erroneous Ideas to Overcome

Relating the problems that the agency had to overcome, Davies told the subcommittee the first was the general but highly erroneous belief that the country had unlimited supplies of oil. That belief, extendig even to many in the industry, was a handicap when PAW asked for steel for drilling and, he disclosed, in the beginning WPB was not going to allow any steel for drilling.

"Because of the sadly deficient supply of steel and other materials, the board was faced with the necessity of eliminating nonessential uses in order to meet the requirements for munitions and essential industrial and civilian purposes," he explained. "But I consider it important to note that we did fully acquaint the board as to the urgency of continuing oil development and prevailed upon it to raise the allocation of steel for the production branch of the industry from zero to 60 percent of the amount used in 1941. Moreover, it should be noted that it was not WPB and it was not PAW which kept the oil industry from having all the steel it wanted; it was three little men in Berlin, Rome and Tokyo."

The allocation of that steel was the next problem and it finally was "traded" for oil on the best terms possible, under Conservation Order M-68. Davies, however, denied that the order took no account of differing local or regional conditions, and pointed out to the varying spacing patterns developed and the exceptions provided, 3770 of which have been granted since the order was issued December 23, 1941.

"The administration of M-68—trying to get maximum oil production from a sharply-limited steel supply—has been our most worrisome job in the field of production," he commented.

Davies went on to explain the disruption of transportation facilities raised a problem of supply, which led PAW to institute the procedure of monthly certification of amounts advisable to produce in each state, explaining that these were simply recommendations although, with few exceptions, the state authorities have accepted them.

"As additional transportation facilities have been completed," he added, "we have recommended increasingly larger production rates in those states and areas capable of producing additional oil. As a result, we have received the counter-complaint that the rates we have recommended are too high, and some states have urged that we decrease our certifications."

Problems in Refining

Other problems were encountered in the field of refining, he told the subcommittee. Between 1941 and midsummer this year, the average production of automotive gasoline per barrel of crude has been reduced from 18 to 12 gallons, while the output of aviation gasoline, toluene and butadiene has been increased from approximately ½ gallon to 3½ gallons.

"We are not permitted to make public the production figures on 100-octane," Davies said, "but it is well known that we were making only about 45,000 barrels per day by the first of January, 1942, and I would be substantially understating the position if I were to say that, as of September 1, we were making 400 percent as much, and that additional plants have gone on stream since then and are continuing to go on stream with regularity."

In the course of the drastic changes that have been forced upon the industry there have been casualties, Davies admitted, but, he contended, every effort has been made by PAW to minimize them, especially among the smaller and weaker companies, and instead of a "plot to squeeze the little refiner," the limitations on crude runs have been intended to and have resulted in keeping plants open at a reduced rate, rather than let them get to the point where they had to shut down altogether.

Transportation

In the field of transportation to the East, in the past two years, the rail movement has been raised from 5000 barrels daily to a peak of more than 1,000,000 barrels; pipe-line movement has increased from 42,000 to 406,000 barrels, and barge shipments have increased from 64,000 barrels in April, 1942, to 168,000 barrels.

The current No. 1 problem, Davies indicated, is manpower, but definite steps have been taken to deal with it by lengthening the work week, now in some instances as long as 56 and 60 hours; working out a withdrawal program with selective service for the re-

lease of men for the armed forces, etc.

"All of the foregoing could be summarized in a single sentence, which would be this: In spite of serious and continuing obstacles, including shortages of men and materials, sufficient oil has been produced, refined, transported and distributed to meet military and essential civilian requirements, adequately and on time," Davies said.

But, he added, while there is no likelihood now seen of further restrictions on civilian gasoline this year, neither is there any prospect of relaxation, and next year there is a considerable possibility that both volume and quality of gasoline may have to be reduced.

Price Increase

In the field of new resources, the answer to the problem is a price increase, Davies asserted, the one thing that "would produce the greatest results in the least time at the most reasonable cost and with the fewest administrative difficulties."

"Unless exploratory activity yields greater returns and new fields are opened to production, the productive capacity of the nation will continue to decline slowly but surely," he warned. "Even with credit given to new fields likely to be found, and with an increased tempo in development drilling, our productive capacity will decrease from the present value of slightly less than 4½ million barrels per day to about 4-1/3 million barrels per day by the end of 1944. Balanced against an anticipated demand of about 4.7 million barrels per day during the latter part of 1944, it is obvious that the deficit of at least 1/3 million barrels per day must be supplied from dwindling stocks and from sources outside the United States."

Oil from Outside

With this in view, Davies explained, PAW is programming an increase in crude production in the Caribbean area from about 688,000 barrels daily now to more than 1,000,000 barrels daily by the end of next year, the latter representing about the peak of productive capacity for presently known fields, and increased production also is programmed in the Middle East.

But the success of the Caribbean project is dependent upon the ability to develop productive capacity of the types of crude required in the time and to the extent necessary, the availability of tankers and the safety of the sea lanes.

Utilization of more Middle East production is dependent not only upon the availability of tankers and the safety of sea lanes, but also upon the capacity of the refineries, and, beyond a certain point, increased use of that oil will involve time-consuming construction of additional refinery facilities.

"If all the many factors involved in the success of these programs coincide perfectly, there will be sufficient crude oil available to meet all the essential civilian and military requirements that we can foresee through the year 1944, providing always, of course, that some sudden upsurge in military demand does not unexpectedly occur," he said. "But it is because we cannot afford to take chances with our ability fully to meet essential civilian and military demand that we are attempting in every way possible to augment our domestic crude oil supply."

Davies defended the British against charges that they are hoarding their oil, explaining that American and British resources have been employed jointly from the beginning of hostilities to the extent possible by conditions of danger in the Mediterranean. Further, he pointed out, the Middle East oil is not owned exclusively by the British, but we have a large interest there.

Members of the subcommittee questioned Davies at length on a variety of subjects, including the alleged heavier curtailment of supplies to independent than to owned filling stations by the major companies.

Representative Clarence J. Brown of Ohio went deeply into the affiliations of PAW officials and, one by one, the division heads present rose and reported that they had either entirely severed their company connections or were on leave of absence with severance compensation ranging from one third to one half of their regular compensation, while Davies himself said Standard Oil Company of California was paying the difference between the $10,000 he received from the government and his $57,500 as a vice president of the company.

Davies pointed out that in no instance was a PAW official active in the affairs of his company and that no man took any action in PAW matters affecting his company. A matter affecting the company of a division head is handled by his assistant and vice versa, and division heads do not select their assistants themselves, the appointments being made by either Ickes or Davies.

Further, he said, while there is a disparity between the major company and independent men in the organization, PAW has made strenuous efforts to secure more from the minor companies, but those companies contend that they do not have large enough staffs to enable them to spare their senior officials. In the industry committees and on the council, where service is part time, the independents and the majors are pretty much on a 50-50 basis, he declared.

Short in District 2

Responding to questions regarding refinery operations, J. R. Parten, director of transportation, explained that plants in District 2 are suffering from lack of crude because of diminution of available production. Those plants, he said, would have to use West Texas sour crude to get capacity operation, and while there is adequate provision for transportation the cost of moving the oil is so high that some plan for compensation of excess cost would have to be developed. PAW now is seeking to have Defense Supplies Corporation adopt a plan similar to that provided for East Coast shipments, to take up the difference between the pipe line cost of around 38 cents a barrel and the tank-car charge of $1.15 a barrel.

Middle East

Davies also submitted a memorandum covering the situation in the Middle East, destined to become one of the world's principal sources of oil but currently in the early stages of development throughout much of the territory.

Approximately two thirds of the Middle East crude oil production comes from the oil fields of Iran and is shipped by pipe line to the refinery at Abadan, on the Persian Gulf, which is the largest refinery in the area. It is rated as having an input capacity of 235,000 barrels daily, based upon the maximum production of 100-octane aviation gasoline.

"The Abadan refinery has been operated at the fullest extent possible in supplying the distribution area which could be served most effectively therefrom when employing tankers on the short haul principle and on routes satisfactory from a military standpoint," it was stated. "A special factor in connection with the operation of this refinery has been the necessity of producing a surplus of distillates and the heavier fuel oils, for which no outlet was available, coincident with the production of the gasoline, kerosine, and fuel oils which were required under the supply program. This surplus oil has been returned by pipe line to the oil fields and pumped back into the underground formation. During the past summer, the Abadan refinery processed crude oil at a rate equal to about 80 percent of its input capacity. Its capacity will be increased as additional aviation gasoline units are completed.

"Other refineries in the Middle and Near East include those at Tripoli, in Syria, and Haifa, in Palestine, which are supplied with crude oil by pipe line from the oil fields of Iraq; on Bahrein Island, in the Persian Gulf which is supplied with crude oil from Bahrein and nearby Saudi Arabia; and at Suez, which is supplied with crude oil from the Egyptian fields. This group of refineries operated virtually at their rated capacities during the past summer, when exposure to enemy bombing had been reduced.

"The petroleum supplies for the Middle and Near East are handled for the most part under the British program and, until recently, the supply sources in that area have been restricted by the necessity to operate available tankers on routings which involved the shortest haul.

"With the improvement in tanker availability, which has resulted primarily from the construction of new vessels and the decrease in losses from enemy attacks, the Petroleum administration for War, the Army-Navy Petroleum Board, and the Office of the British Petroleum Representative, have worked to maximize supplies from the Middle and Near East for the fighting theatres.

"Specific steps have been taken to provide additional supplies of products which can be utilized to advantage from Middle and Near East refineries to the full extent of refinery capacity and available stocks. It has been the constant objective of PAW, in close cooperation with the representatives of the military and other government agencies, as well as with the foreign governments concerned, to increase as rapidly as possible, consistent with military developments, the utilization of the petroleum resources and facilities in the Middle and Near East.

"Planning and programming to this end was under way far in advance of the elimination of the Axis threat of occupation of this area, the resulting clearance of the Mediterranean, and the prospect of more tankers. These plans were developed in anticipation of just such eventualities and are being completed with all dispatch possible. The extent to which supplies from the Mid-

dle and Near East can be used to displace Western Hemisphere supplies of usable products will be limited, however, by the present refinery capacity of the area and at the start will provide a relatively small increase over the present output of such products. The real effect will only be realized with the completion of major refinery construction and the further easing of the tanker situation, which, under wartime difficulties, will take some time.

"The construction of additional refinery capacity in the Eastern Mediterranean and Persian Gulf areas is being expedited. These facilities will permit the increased production in these areas of petroleum products required by the military forces of the United Nations in the Middle, Near, and Far Eastern campaigns. Progressively, as the additional refinery facilities and tankers are completed, it will be possible to draw more supplies from Middle and Near East sources.

"However, it must be remembered that these increases may be partially or fully offset by the enlarged demands for military petroleum products in the Middle, Near, and Far East theatres of war, and the extent to which the Western Hemisphere will thus be relieved of present supply responsibilities must depend upon the magnitude of this future military demand."

Introduced by Chairman William R. Boyd, a trio of PIWC members—Chairman Alton W. Jones of the transportation committee, Robert E. Wilson of the petroleum economics committee and John D. Gill of the cost and price adjustment committee — explained, respectively, the situation with respect to transportation, supply and price.

Price Alternate Proposed

The price dominated generally throughout the hearings, with Representative Wolverton of New Jersey particularly inquiring as to whether the allowance of increased price to flowing wells would not be an undue cost for whatever new oil might be developed and indicating that, while he was not committed to a subsidy, he thought there might be an alternative which would not advantage the owners of flush production, but would give additional revenue to the small marginal operators and wildcatters.

Wolverton, however, made it clear that he felt PAW is operating efficiently, particularly after Davies had explained, in answer to previous questions, the agency had vainly sought to have WPB approve a regulation requiring suppliers to treat all filling stations equitably.

Commenting that the failure to provide protection, a subject of much complaint from station operators, demonstrated the undesirability of divided control, the Congressman said: "PAW has been so far ahead in handling the problems and providing the solution that it would not be amiss if consideration, and serious consideration, was not given to the setting up of this central organization under the leadership of Secretary Ickes and those who are associated with him."

Jones gave the committee a historical review of the development of alternative means of transportation to replace tankers in the eastern service, and pointed out that, as a result of the war, the industry has made many sacrifices and is witnessing "a dispersal and perhaps a permanent loss of markets which it has taken years to build up."

"We have done the job that had to be done and have taken pride in doing it," Jones declared. "Nevertheless, the oil industry has been the target of carping criticisms uttered by people who were either completely careless or completely indifferent to the facts. Only the uninformed would claim that an oil man relishes the idea of urging his customers to quit using his products. Competition does not mean that you compel your customers to convert to the products of your competitor. The industry has even been accused of hoarding oil and thereby keeping it from the civilian markets. Nothing could be more ridiculous than to level that charge at any industry that is famed for its investment of millions of dollars and decades of research in creating and expanding markets for its supplies." Whereas, before the war, 95.2 percent of the east oil supplies arrived by tanker, today only 14.4 percent arrives by boat, yet as a result of transportation reforms more oil is being delivered to the coastal area now than in 1941, he said.

Congress Continues Criticism Of Army's Canol Project

The Army's $138,000,000 "Canol" project continued to be the target of criticism in the House last week, with Representative Gavin of Pennsylvania attacking the statement issued by R. W. Gallagher, president of Standard Oil Company (New Jersey), following previous debate on the matter (THE OIL WEEKLY, October 18).

Gavin revealed that all the documents relating to the project had been turned over to the Truman committee by the War Department, but continued to question the necessity for secrecy claimed by the department on grounds of military security, pointing out that all the information necessary for enemy attack had already been revealed.

The Pennsylvania Congressman asserted Gallagher's statement answered only a few of the questions which had been raised, and did not reveal the terms of the contract, under what authority it was made and what becomes of the project after the war.

Questions Price Agreement

He also questioned the effect of the 75-cents-a-barrel reduction to be made in the price of the Fort Norman oil after 1,500,000 barrels have been purchased by the government at $1.25 per barrel, through which the government is to be reimbursed for its outlays, declaring that only the estimated production of 3,000 barrels a day, it would take 168 years to come out even.

On the basis of a $138,000,000 outlay, he asserted, the cost of Fort Norman oil will be about $46,000 a barrel.

"If the contract of May 20, 1942, permits Canada to buy the property outright at the termination of the war," Gavin told the House, "I cannot figure out how Mr. Gallagher can determine how we are going to get the American taxpayer's money back, because all the whole outfit will bring only scrap prices for the pipe line and refinery as there is no local market to speak of for the oil, so it would be better to continue the good-neighbor policy and give Canada the whole setup outright as it will have no marketable value to speak of."

The whole thing, he said, looked to him "like a grand old Work Projects Administration project" and, he added, "I do not object to a WPA project if the money is expended in the United States, but I cannot reconcile the spending of the taxpayers' money up in Canada on a project of this type requiring not only our men and money but thousands of tons of material, such as pipe, 15,000 tons of which was the initial shipment, which could have been used in this country to good advantage and contributed very greatly to increasing the production of oil in the United States."

Order Permits Uniform Wages for Drilling Crews

Uniform minimum wage brackets for all oil-well drilling occupations throughout the Mid-Continent area have been approved by the War Labor Board at the instigation of PAW officials waging a three-way attack on problems which are threatening the drilling program.

Manpower and wage inequities are becoming a most critical factor in the drilling of wells, labor shortages and employment of inexperienced personnel already having decreased the efficiency of drilling operations between 15 and 20 percent, it was declared by Davies.

The PAW attack on the problem is aimed at the establishment of attractive wage levels, to hold experienced men; the establishment of machinery to recruit additional workers, and the development of a plan to assure full-time employment with overtime for all drilling workers by advance scheduling of all operations and the cooperative exchange and transfer of drilling personnel among contractors.

Davies pointed out that when the President's wage-stabilization order was issued, substantial disparities existed among the various producing areas which "naturally has encouraged drillers to seek employment in the higher wage-rate areas.

"Unfortunately, in the oil industry's intensive search for new sources of oil, the location of spots that look promising is not confined to the areas where standard wages are paid," he said. "The wells must be drilled wherever there is a chance of finding new oil fields, and the War Labor Board has removed one serious deterrent by acceding to our request. Local board approval must be obtained, however, for each individual company increase.

"Men and materials are two of the factors affecting the drilling of the new oil wells that we need so desperately to offset the very real shortage of crude oil that faces us. PAW is attacking both of these problems in every possible way and we are gradually solving them. Materials, in cooperation with the War Production Board, are being made available for all of the wildcat discovery wells that anyone is willing to drill, and for the wells necessary to complete the development of present fields."

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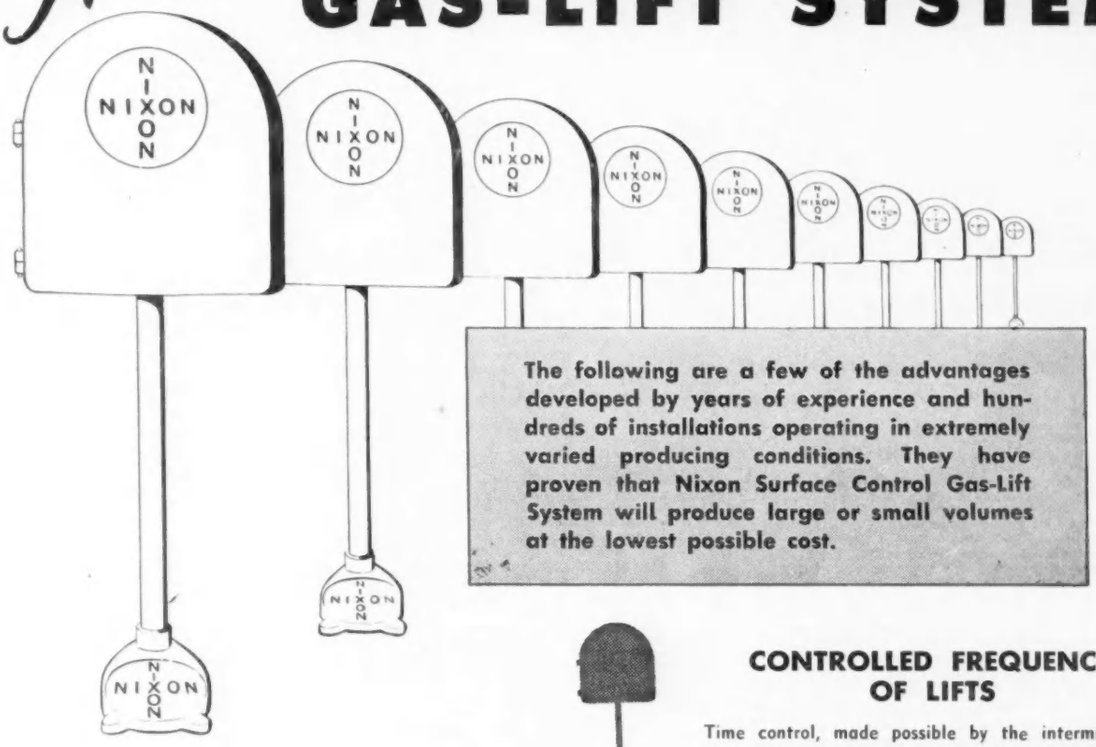

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By being able to control the level from which lift originates, it is necessary to inject only sufficient gas to raise the column of fluid to the surface. Allowance may also be made for the expansion of gas as it travels up the tubing. This eliminates any excessive, wasteful use of gas to lift the fluid to the surface.

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Preference Rating Order P-98-b
As Amended October 19, 1943

Part 1041—Production, Transportation, Refining and Marketing of Petroleum

The fulfillment of requirements for the defense of the United States has created a shortage in the supply of critical materials for defense, for private account and for export; and the following order is deemed necessary and appropriate in the public interest and to promote the national defense:

§ 1941.2 Preference Rating Order P-98-b, Purpose, Definitions and Special Priorities Provisions

(a) **Purpose.** This order tells how persons engaged in the petroleum industry may obtain priorities assistance to secure material for their operations.

This order will not be used by foreign operators who will continue to use Priorities Regulation No. 9 and forms provided for in that regulation. Nor will the order be used to secure material to be used in the Territory of Hawaii. Such material may be obtained through the procedure established by the War Production Board Regional Office for Region X rather than through this order. All other operators, including Canadian operators, must use the procedures of this order.

In general, this order provides priorities assistance to obtain material for three different purposes, and a separate procedure will be followed for each. They are as follows:

(1) Material for maintenance and repair purposes, operating supplies and laboratory equipment is secured under the MRO procedure, set out in the second major portion of this order (paragraphs (d), (e) and (f)). Preference ratings and an allotment symbol for controlled material are indicated and may be used in accordance with the procedure specified in that section.

(2) Material for most production activities, which include exploratory work and well drilling, is secured through the procedure described in the third major portion of this order headed, "Material for Use in Production" (paragraphs (g), (h), (i) and (j)). The preference rating to be used is indicated in paragraph (h). For controlled materials, however, an allotment number must be applied for. In either case, the preference rating and allotment number may be used only in accordance with the specified delivery order filing procedure, similar to that of the MRO provisions.

(3) A fourth major portion of this order (paragraphs (k), (l), (m) and (n)), describes how materials are secured for use in certain special production operations, natural gasoline recovery, transportation, refining and marketing. Here, application must be made for both a preference rating covering specific materials and an allotment of controlled materials. Any rating and allotment number assigned pursuant to such an application may be used without submitting delivery orders to either the Petroleum Administration for War or the Office of Oil Controller.

The materials which are obtained under this order may be used only in accordance with the provisions of certain applicable Petroleum Administrative orders. A general description of the scope of these orders is given in the appropriate section sections of this order.

(b) **Definitions.** (1) "Operator" means any person to the extent that he is engaged in the petroleum industry. If he has been assigned a serial number under this order and is located in the Dominion of Canada, he will be referred to as a Canadian Operator.

(2) "Petroleum" means crude oil, petroleum products and associated hydrocarbons, including but not limited to natural gas.

(3) "Petroleum industry" includes any of the following activities and any operation directly incident to these activities:

(i) The discovery, development or depletion of petroleum pools (production);

(ii) The extraction, or recovery of natural gasoline and associated hydrocarbons (natural gasoline recovery);

(iii) The transportation, movement, loading or unloading of petroleum other than natural gas (transportation);

(iv) The processing, reprocessing or alteration of petroleum, including but not limited to compounding or blending (refining);

(v) The distribution or dispensing of petroleum products (other than natural gas) and the storing of petroleum products incident thereto (marketing);

and shall include for each of the above listed branches of the industry, to the extent applicable, the control of, or the investigation into more effective methods of conducting, petroleum industry operations by means of research, technical or control laboratories.

(4) "Maintenance and repair" means (without regard to accounting practice):

(i) The upkeep of any structure, equipment, or material in a sound working condition or the restoration or fixing of any structure, equipment, or material which has broken down or is worn out, damaged or destroyed;

(ii) Any other use of material not exceeding in material cost $500 for any one complete operation which has not been subdivided for the purpose of coming within this definition.

Maintenance and repair does not include **(a)** the deepening, redrilling or plugging back of any well or the initial installation on any well of pumping or other artificial lifting equipment, or **(b)** any use of material in connection with a service station or retail outlet other than for upkeep or restoration purposes, or **(c)** the installation or replacement in marketing of any "equipment" defined as such in Petroleum Administrative Order No. 12.

(5) "Operating supplies" means any material other than material used for maintenance and repair which is essential to and consumed in the petroleum industry and which is normally carried by an operator as operating supplies or which is normally chargeable to operating expense.

(6) "Laboratory equipment" means material or equipment used exclusively for the purpose of controlling, or investigating more effective methods of conducting, petroleum industry operations by means of research, technical or control laboratories. This material or equipment shall not, however, include material for use in the construction of laboratory buildings or other structures.

(7) "Controlled material," "Class A product" and "Class B product" shall have the same meanings respectively, as in CMP Regulation No. 1 of the War Production Board.

(8) "Delivery order" means any purchase order, contract, release or shipping instruction which constitutes a definite and complete instruction from a purchaser to a seller calling for delivery of any material or product. The term does not include any contract, purchase order, or other arrangement which, although specifying the total amount to be delivered, contemplates that further instructions are to be given before delivery is made.

(9) "Authorized controlled material order" means any delivery order for any controlled material as such (as distinct from a product containing controlled material) which is placed pursuant to an allotment as provided in this order or which is specifically designated to be such by any regulation or order of the Petroleum Administration for War or the War Production Board.

(c) **Priorities assistance for repair services and particular materials.** (1) An MRO rating assigned by this order may be used to obtain the use of any facilities or services for the repair of an operator's plant, machinery, or equipment, except facilities or services used for ordinary plumbing, heating, electrical, automotive or refrigeration repairs. By the terms of Priorities Regulation No. 3 repair services for which a rating may be used do not include periodic inspection, cleaning, painting, lubricating, or similar jobs. In the event that a rating is desired for services of this character, the operator should request such a rating by a letter filed with the Petroleum Administration for War, Washington 25, D. C., specifying the work required and the facilities with which it will be done.

(2) An MRO rating assigned pursuant to this order may also be used to obtain any item on List B of Priorities Regulation No. 3 for which a rating is required. However, to use an MRO rating for such an item an operator must submit his delivery order in accordance with Schedule "A", Part 3, of this order and may place the rated delivery order with a supplier only after approval is received.

(3) Priorities assistance for the materials listed on Schedule "B" of this order may also be obtained under this order but only by filing the forms specified on that schedule in accordance with the instructions contained in that schedule.

(4) Priorities assistance may **not** be obtained under this order for material or equipment to be used by consumer accounts for or in the storage or dispensing of petroleum, including liquefied petroleum gas. Maintenance and repair for this type of equipment is covered under Preference Rating Order P-98-e.

(5) Priorities assistance may **not** be obtained under this order for tank trucks and trailers, railroad rolling stock, marine equipment or parts for any of these, unless the priorities assistance is used to secure the following:

(i) Material to be actually attached to a tank truck or trailer and necessary for containing, dispensing, measuring the movement of, or distributing petroleum;

(ii) Parts for railroad rolling stock, which rolling stock is owned or leased by the operator, is used on his premises and in the petroleum industry, and is not under the jurisdiction of the Interstate Commerce Commission.

(iii) Parts for marine equipment, which marine equipment is used or chartered by the operator, is used on or in the vicinity of his premises and in the petroleum industry, and for which no other method of securing priorities assistance exists.

Special methods for securing priorities assistance for the above equipment or equipment parts which may not be obtained under this order have been established by the Office of Defense Transportation, the Maritime Commission, and the War Production Board.

(6) Priorities assistance may **not** be obtained under this order for "residential construction" or "multiple residential construction", as defined in Order L-41 where the construction is in connection with natural gasoline recovery, transportation, refining or marketing. Order L-41 establishes methods for securing needed priorities assistance.

MRO Material—Maintenance and Repair, Operating Supplies, and Laboratory Equipment.

(d) **Allotment symbol and rating.** To secure material for maintenance and repair, operating supplies or laboratory equipment (all known as MRO material), an operator may use allotment symbol MRO-P-3 and preference rating AA-1, except that only a rating of AA-5 may be used to buy MRO material for use in retail marketing.

(e) **How to use allotment symbol and rating.** To use the MRO allotment symbol and rating, an operator must:

(1) Place the allotment symbol on delivery orders for controlled materials and the allotment symbol and preference rating on delivery orders for other MRO materials, certifying each delivery order in accordance with paragraph (r).

(2) Endorse on each delivery order of $100 or more (or accompany it by) a statement telling the specific use to which the material is to be put, the branch of the petroleum industry and the PAW District in which it is to be used, the price, quantity and description of the material (including weight if it is a controlled material).

(3) Prior to placing each delivery order with a supplier, submit copies of the order as follows:

(i) If the delivery order is for less than $1,00, **no** copy need be submitted.

(ii) If the total amount of the order is for $100 or more, but less than $1,000 and no item on the order costs more than $500, **one** copy must be submitted for information purposes.

(iii) If the total amount of the order is $1,000 or more and no item on the order costs more than $500, **two** copies must be submitted.

(iv) If any item on the order costs more than $500, **two** copies must be submitted.

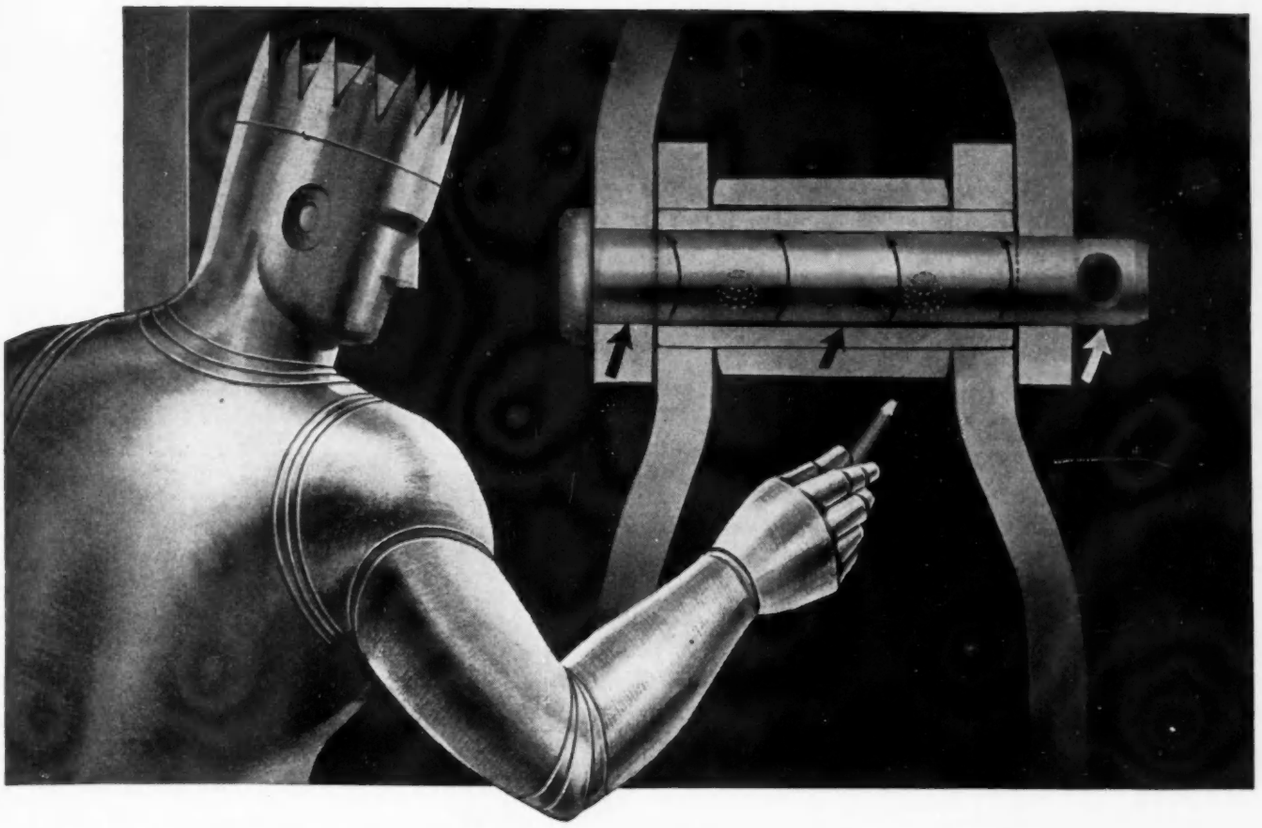
All orders for MRO material for use in production must be submitted to the District Office of the Petroleum Administration for War for the District in which the material is to be used.

Other MRO orders must, if they fall within groups (ii) and (iii) above be submitted to the District Office for the District in which the material is to be used, or at the operator's election, where his purchasing office is located; if they fall within group (iv) above, be submitted to the Washington Office. Canadian orders must be submitted to the Office of Oil Controller, Dominion of Canada.

An operator may not place a delivery order in groups (iii) or (iv) with a supplier until there has been returned to him one approved copy of such order.

In the case of delivery orders for the special materials listed on Schedule "A", the filing instructions set out in that schedule apply.

(4) An operator requiring aluminum as a controlled material need only certify his de-



HIS THREE-DIAMETER PIN
makes Chain hook-up easy

Making new chain hook-ups and replacing links in the field are easy jobs with Rex Oil Field Chains. For, in designing his Oil Field Chain, Rex Mechanical Engineering—Rex M. E.—added a feature—the famous three-diameter pin.

With this pin, the chain can be disassembled in the field without heavy battering of sledges or drift pins—ending the danger of smashed hands and skinned knuckles. The pin is a drive fit but only for a distance equal to the side-bar thickness—a pin easy to drive in and easy to drive out, but that stays put.

And another important feature: removal of links does not necessarily end their usefulness. They can be reused—for they are free from the enlarged holes and loss of "fit" common when drifting and long pin drives are necessary.

Rex M. E.'s Oil Field Chains have other important advantages, too! Their balanced design reduces weight and prolongs chain life. Precision-made pins, bushings, rollers and side bars are assembled into the Rex Unit Link by powerful, carefully controlled presses to assure heavy force fits at every point. Exclusive oiling system assures effective lubrication.

Rex Oil Field Chains and other Rex products are stocked at your supply store with territorial men ready to serve you in every oil field. See them or write Chain Belt Co., 1639 W. Bruce St., Milwaukee 4, Wis.

REX UNIVERSAL
3125—D3125
Furnished as a single and/or double strand chain with ultimate strengths of 115,000 and 230,000 lb. For the deepest and fastest oil well drilling.
REX DEEPWELL
A. P. I. 3—A. P. I. 4
Ultimate strength—60,000 and 130,000 lb. All-around chain recommended for 70% of the conditions encountered in modern oil field drilling.
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Ultimate strength 75,000 and 170,000 lb. For extremely hard and deep drilling, where load is the main factor.

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2000 other Types and Sizes of Chain Belts

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CHAIN BELT COMPANY OF MILWAUKEE

livery order in accordance with paragraph (r) if the quantity required is 500 pounds or less from all sources during a calendar quarter. If the quantity required is more than 500 pounds, he must apply by letter for permission to purchase the excess amount (furnishing the applicable information called for by paragraph (d) of Supplementary Order M-1-i) to the Aluminum and Magnesium Division, War Production Board, Ref: M-1-i. If approved the operator must certify his delivery order in accordance with paragraph (r) before submitting it to a supplier. Copies of aluminum delivery orders need not be submitted to the Petroleum Administration for War unless required by Schedule "A".

(f) **Emergency MRO materials.** Where there has been an actual breakdown or suspension of operations, and where the methods specified above will not get the material on the date and in the quantity required, an operator may request authority to secure emergency MRO material by letter, telegram or telephone to the District Office (in the case of production), or to the Washington Office (in all other cases), Ref: P-98-b, supplying the following information:

(1) Date of actual breakdown or suspension of operations and exact explanation as to what extent operations are affected.

(2) Description of equipment to be repaired and its function in maintaining continuous operation.

(3) Price, quantity and detailed description of necessary material (including weight if a controlled material) and number and date of delivery order(s) thereof.

If information is supplied by telephone, it must be confirmed within three days by letter or telegram. No delivery order for emergency MRO material need be submitted to the Petroleum Administration for War but an operator shall not place a delivery order with a supplier for the emergency MRO material until approval has been received and the delivery order has been certified in accordance with paragraph (r).

Material for Use in Production

(g) **Scope of paragraphs (g), (h), (i), (j).** The following paragraphs under this general heading of "Material for Use in Production" set forth the methods to be used by a production operator in securing and using priorities assistance to get the material he will need for most of his operations. However, these paragraphs do not cover methods for obtaining priorities assistance for **MRO material** or **material for use in the following special production operations:**

Gas cycling operations for condensate recovery (including gathering and injection lines in connection therewith),
Gas desulphurization operations,
Gas dehydration operations,
Pressure maintenance operations, or
Gas lift compression plants or gas booster plants having a rated capacity in excess of 500 h. p.

Methods for securing **MRO material** have been set forth in paragraphs (d), (e) and (f) above, while methods for securing **material for special production operations** are set forth in paragraphs (k), (l) and (m) which follow:

References made in paragraphs (h), (i) and (j) immediately below, to production allotment numbers and ratings or to materials for use in production, apply only to the acquisition and use of material for the production operations covered by these paragraphs. Such references **do not apply** to MRO material or to material for use in the special production operations listed above.

(h) **Allotment number and rating.** (1) To secure controlled materials for use in production, an operator must secure an allotment and an allotment number by filing four copies of PAW Form 35 with the District Office of the Petroleum Administration for War, for the District in which the operations are to be conducted (a Canadian operator files such forms with the Office of Oil Controller, Dominion of Canada) in accordance with the following:

(i) If he has drilled, or there has been drilled, for his operations, 40,000 feet of hole or more in 1942, the application must be filed at least three months prior to the beginning of the calendar quarter in which the controlled materials are to be delivered.

(ii) If he has drilled, or there has been drilled, for his operations, less than 40,000 feet of hole in 1942, the application must be filed not less than one month prior to the proposed delivery date of the controlled materials. If he is able to plan his operations, an applicant in this class (ii) should file his application three months prior to the beginning of the calendar quarter in which the controlled materials are to be delivered, or as far ahead of the commencement of such quarter as possible.

(iii) In addition, interim assistance may be requested at any time by filing PAW Form 35.

(2) To secure materials, other than controlled materials, for use in production, an operator may use preference rating AA-2X.

(i) **How to use allotment number and rating.** To use his production allotment number and rating, an operator must:

(1) Place the allotment number on delivery orders for controlled materials and the allotment number (if an allotment number has been assigned) and preference rating on delivery orders for other materials, certifying each delivery order in accordance with paragraph (r).

(2) Endorse on each delivery order of $100 or more (or accompany it by) a statement telling the specific use to which the material is to be put, the branch of the petroleum industry and the PAW District in which it is to be used, and the price, quantity and description of the material (including weight and PAW Form 35 application serial number if it is a controlled material).

(3) Prior to placing each delivery order with a supplier, submit copies of the order to the District Office of the Petroleum Administration for War for the District in which the material is to be used (or to the Office of Oil Controller if he is a Canadian operator) as follows:

(i) If the delivery order is for less than $100, **no** copy need be submitted.

(ii) If the total amount of the order is for $100 or more, but less than $1,000 and no item on the order costs more than $500, **one** copy must be submitted for information purposes.

(iii) If any item on the order costs more than $500, or if the total amount of the order is $1,000 or more, **two** copies must be submitted.

An operator may not place a delivery order in group (iii) with a supplier until there has been returned to him one approved copy of such order.

In the case of delivery orders for the asterisked special materials listed on Schedule "A," the filing instructions set out in that schedule apply.

(j) **How to obtain authority to use materials.** Use of material in production is controlled by Petroleum Administrative Order No. 11, as amended and supplemented from time to time. Unless authority is granted by PAO-11 or an amendment or supplement to that order, to use material in the particular production operation, the operator must obtain an exception under PAO-11.

Material for Use in Special Production Operations, Natural Gasoline Recovery, Transportation, Refining and Marketing.

(k) **Scope of paragraphs (k), (l), (m), (n).** The following paragraphs under this general heading of "Materials for Use in Special Production Operations, Natural Gasoline Recovery, Transportation, Refining and Marketing" set forth the methods to be used by an operator engaged in any one of those industry branches or operations in securing and using priorities assistance to get the material he will need for his operations. The special production operations for which priorities assistance is made available by this major section are:

Gas cycling operations for condensate recovery (including gathering and injection lines in connection therewith),
Gas desulphurization operations,
Gas dehydration operations,
Pressure maintenance operations, or
Gas lift compression plants or gas booster plants having a rated capacity in excess of 500 h. p.

Methods for securing **MRO material** have been set forth in paragraphs (d), (e) and (f) above. References made in paragraphs (l), (m) and (n) immediately below to allotment numbers and ratings and to the use of material, apply only to the acquisition and use of material for the operations covered by these paragraphs. Such references **do not apply** to MRO material.

(l) **Allotment number and rating.** To secure equipment or material requiring an allotment number or preference rating for use in any special production operations, natural gasoline recovery, transportation, refining or marketing, an operator must file PAW Form 30 in accordance with the instructions set out on that form. Form WPB-541 (PD-1A) may be used instead of this form to obtain any single item of machinery or equipment, regardless of cost, if that single item of machinery or equipment can be installed with the use of no more than $500 worth of additional material. The additional material (no more than $500 worth) may be purchased through the MRO procedure of this order. A Canadian operator must file these forms with the Office of Oil Controller, Dominion of Canada.

(m) **How to use allotment number and rating.** To use the allotment number and rating granted through a PAW Form 30 application or obtained on Form WPB-541, an operator must place the allotment number on delivery orders for controlled materials and the allotment number (if an allotment number has been assigned) and preference rating on orders for other materials, certifying each delivery order in accordance with paragraph (r). An operator may place authorized controlled materials orders only for the controlled materials specified for use in the operations designated on the PAW Form 30 application and may apply or extend the preference rating only to secure material requiring a rating and approval in connection with the PAW Form 30 application.

(n) **How to obtain authority to use material.** (1) Use of material in **transportation** or **refining,** is governed by Petroleum Administrative Order No. 15. Use of material in **special production operations** described above and in **natural gasoline recovery,** is governed by Petroleum Administrative Order No. 11. Since either PAW Form 30 or Form WPB-541, when filed as an application to secure material for use in connection with special production operations, natural gasoline recovery, transportation or refining, is also considered an application to use materials in connection with such operations, the authorization obtained by an operator by either of these forms shall be considered authority to use the materials specified on the forms in accordance with the provisions of such orders.

(2) Use of material (other than liquefied petroleum gas equipment) in **marketing** is governed by Petroleum Administrative Order No. 12, as amended and supplemented. If use of the material (other than liquefied petroleum gas equipment) is not authorized by PAO-12, the operator must secure an exception under that order.

(3) Installation of liquefied petroleum gas equipment is governed by Order L-86. If the material to be used in marketing is liquefied petroleum gas equipment and installation of such is not permitted by Order L-86, the operator must secure an exception under that order.

(4) Exceptions under PAO-12 or L-86 do not afford priorities assistance to secure material. Such priorities assistance should be applied for under paragraph (1). MRO material will, of course, be obtained through the MRO procedures of this order, or, where applicable, through Preference Rating Order P-98-e.

General Provisions

(o) **Allotments by operators.** An operator who has obtained an allotment of controlled materials may require the manufacture and installation of certain Class A products or may undertake the operation through a construction contractor. In either case it may be necessary for the operator to allot a portion of his allotment to the Class A product manufacturer or to the contractor (each of whom then becomes a "secondary consumer" under CMP Regulations) for reallotment or the placement of authorized controlled material orders. Any operator making such an allotment must follow the procedures in CMP Regulation No. 1, except as modified by this order.

(p) **Placement of delivery orders.** (1) In preparing or placing a delivery order an operator shall not alter the customary designation of any item or items for the purpose of making it appear that an item costs $500 or less or that the total cost of all items on the delivery order is less than $100 or $1,000, as the case may be.

(2) Any delivery order for controlled materials placed pursuant to this order and bearing the certification provided for in this order is an authorized controlled material order if the delivery order is in sufficient detail to permit entry on mill schedules and is received by the controlled materials producer at such time in advance as is specified in Schedule III of CMP Regulation No. 1, or at such later time as the controlled materials producer may find it practicable to accept the same. Attention is called to paragraph (t) of CMP Regulation No. 1 relating to rejection of orders by a controlled materials producer, including instances where less than minimum mill quantities, as specified in Schedule IV of the regulation, are requested by an operator.

(3) The allotment number endorsed upon any delivery order bearing the certification provided for in this order shall be an abbreviated allotment number consisting of a major program identification and the quarterly identification. The allotment symbol MRO-P-3, authorized in connection with MRO material, shall constitute an allotment symbol for the purpose of all CMP regulations. In using this symbol no reference to a program or quarterly identification need be made.

(q) **Use, cancellation and reduction of allotments.** (1) An operator who receives an allotment of controlled materials on PAW Form 35 in advance of the calendar quarter in which such materials are to be acquired, must reallot the same or place delivery orders for such materials within thirty days **after the beginning of the quarter.** An operator who receives an allotment of controlled materials on PAW Form 35 during the quarter in which the same are to be ac-

Sub-Surface Facts
ON THE CONTROL OF FLOWING WELLS

No. 6 | 1943 | DALLAS, TEXAS

OTIS TYPE G (Side Door) CHOKE SIMPLIFIES THE COMPLETION & PRODUCTION OF TWO ZONE WELLS...

Makes Possible the Taking of Bottom Hole Pressures of Each Zone Independently of the Other

The Otis Type G Side Door Choke has been generally accepted by the oil industry as standard equipment for use in completing and producing two-zone flowing wells.

The Side Door Choke provides a means to positively open and close circulating ports above a packer without moving the tubing string or breaking the packer seal. This makes it possible to set the packer, land the tubing and permanently hook-up the surface connections before bringing in the well, thereby greatly facilitating two-zone completion operations.

The Side Door Choke provides a means to actually record, with a regular bottom hole pressure gauge, the formation pressure of the upper zone independently of the lower zone. This can be done without moving the tubing string or resorting to uncertain calculations.

The complete operation is performed under pressure with the same steel measuring line used to run the bottom hole pressure gauge and requires only three to four hours.

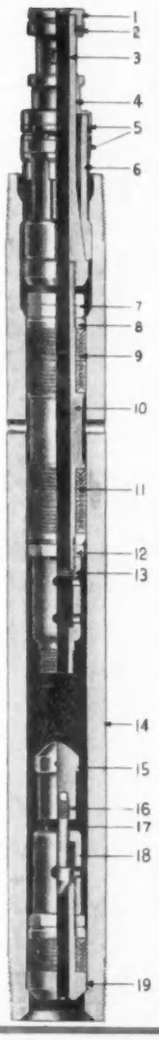
OTHER USES OF SIDE DOOR CHOKE ASSEMBLY

The Otis Side Door Choke also provides a means to accomplish the following:

- To acidize either zone of a two-zone well independently from the other zone.
- To recondition mud back of the packer without exposing the pay zone to the mud column.
- To take bottom hole samples from either zone of two-zone well.
- To serve as a removable jet collar in a gas-lift operation.

SERVICE—Otis Pressure Control maintains experienced crews and service trucks for the installation of all Otis Sub-Surface Tools.

NEW V-TYPE ASBESTOS BASE PACKING ON OTIS SIDE DOOR CHOKE

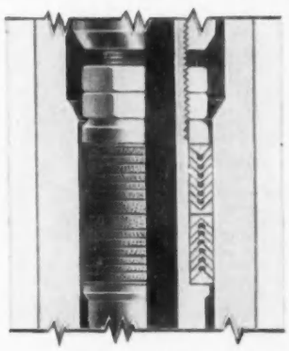


1. Retaining Nut
2. Set Screw
3. Mandrel
4. Slip Carrier
5. Bands
6. Locking Dogs
7. Upper Split Packing Nut
8. Packing Ring
9. Upper Chevron Packing
10. Side Bean Packing Mandrel
11. Lower Chevron Packing
12. Lower Packing Nut
13. Bean Cage
14. Landing Nipple
15. Nut
16. Rivet
17. Drop
18. Valve Cage
19. Cup Mandrel

NEW DESCRIPTIVE FOLDER
on
OTIS TYPE G (Side Door) CHOKE
Complete Details on All Its Uses
• WRITE FOR YOUR COPY NOW •

WITHSTANDS BOTTOM HOLE TEMPERATURES IN EXCESS OF 400°

New V-Type asbestos base packing, inert to acid and alkalies and capable of withstanding temperatures in excess of 400 degrees and pressures exceeding 5,000 p.s.i., is now



being used on Otis Type G Side Door Chokes.

The change was made advisable after difficulty was encountered with the former valve cups in certain deep high pressure distillate wells. Under extremely high temperature and high pressure conditions, both the fabric and the bonding material in the former choke cup were subject to deterioration.

The new V-Type packing completely overcomes this difficulty. Made of many layers of asbestos cloth bonded by a cementing material that resists acids, it is strong enough to withstand any well pressure or temperature encountered. The new packing has $\frac{3}{4}$" thickness, whereas the old type was only $\frac{3}{16}$" thick, increasing its strength in the same proportion.

The Type G Side Door Choke with the new packing element assures positive performance regardless of bottom hole temperatures or pressures.

OTIS PRESSURE CONTROL, INC.
DALLAS, TEXAS

Branches: Houston, Wichita Falls, Corpus Christi, Texas; Hobbs, New Mexico; New Iberia, Louisiana; Magnolia, Arkansas

Representatives: Otis Eastern Service, Inc., Wellsville, New York; Western Pressure Control, Los Angeles and Bakersfield, California

Export Office: 74 Trinity Place, New York City

quired, must reallot the same or place delivery orders for such materials within thirty days **after the allotment is received.** If such an allotment is not used in placing controlled material orders or in making reallotments within such periods, an operator must promptly notify the District Office for the District in which the material was to be used (or the Office of Oil Controller, Toronto, Canada) of the extent to which the allotment has not been reallotted, or orders have not been placed.

(2) An operator who receives an allotment of controlled materials pursuant to application on PAW Form 30 or Form WPB-541 must use it only for the purpose for which it was made. If such an allotment is not used in placing controlled material orders or in making reallotments, the operator must promptly notify the Washington Office (or its Office of Oil Controller, Toronto, Canada) of such facts.

(3) An operator who has made an allotment may cancel or reduce the same by notice in writing to the person to whom it was made. Where an allotment received by an operator is cancelled, he must cancel all allotments which he has placed on the basis of the allotment. Where an allotment received by an operator is reduced, he must cancel or reduce allotments which he has made, or authorized controlled material orders which he has placed, to the extent that the same exceeds his allotment as reduced. In the event this course of action is impracticable, the operator shall immediately request instructions of the Petroleum Administration for War or the Office of Oil Controller.

(r) **Certification.** An operator may use an allotment number or symbol or preference rating authorized pursuant to this order by endorsing upon his delivery order a certification in substantially the following form:

The undersigned purchaser certifies, subject to the penalties of section 35A of the United States Criminal Code, to the seller and to the War Production Board, that, to the best of his knowledge and belief, the undersigned is authorized under applicable War Production Board regulations or orders to place this delivery order, to receive the item(s) ordered for the purpose for which ordered, and to use any preference rating or allotment number or symbol which the undersigned has placed on this order.

This certification may be used as provided in Priorities Regulation No. 7. It may also be used instead of any other certification required by any regulation or order of the War Production Board, to the extent permitted by Priorities Regulation No. 7. The certification must be signed manually or by the use of a facsimile signature as provided in that Regulation.

(s) **Restoration of inventories.** An operator may use an allotment number or symbol or preference rating authorized under this order to restore his inventory to a practicable working minimum. However, an operator may not secure replacements which would result in surplus material as defined in Preference Rating Order P-98-c as amended.

(t) **Restrictions.** An operator may not use the allotment number or symbol or the preference ratings authorized under this order to obtain material:

(1) For any purpose other than a purpose authorized under this order or in greater amounts or on earlier dates than required for any authorized purpose.

(2) Which can be secured without the use of an allotment number or symbol or preference rating.

(3) The use of which could be eliminated without serious loss of efficiency by substitution of less scarce material, or by change of design.

(4) In such amounts or on such dates that receipt of such amounts on the requested dates would result in surplus material as defined in Preference Rating Order P-98-c, as amended.

(5) Unless such operator is a participant in the PAW Materials Redistribution Program No. 2, if participation by the operator in this program is required.

(u) **Applicability of other orders and regulations.** (1) This order and all transactions affected hereby, except as herein otherwise provided, are subject to all orders and regulations of the War Production Board, as amended from time to time.

(2) None of the provisions of CMP Regulation Nos. 2, 5, or 6 (or the limitations incorporated in any CMP Regulation which otherwise would subject an operator to the provisions of CMP Regulation Nos. 2, 5, or 6) shall apply to an operator and no operator shall obtain any material under or be limited by the provisions of such regulations or limitations. The provisions of paragraphs (i), (s), (s-1) and (n) of CMP Regulation No. 1 shall not apply to an operator who secures material in accordance with the provisions of this order. Other than as set forth in paragraph (c) (6) hereof, the provisions of Limitation Order L-41, as amended from time to time, shall not apply to an operator as such operator is limited by the provisions of that order.

(3) Any preference rating, other than a rating for MRO material, assigned pursuant to the provisions of this order is assigned in lieu of a preference rating under an order in the P-19 series. Any reference in any order of the War Production Board to an order in the P-19 series shall constitute a reference to a preference rating assigned pursuant to this order.

(v) **Further limitations on use of priorities assistance.** The Petroleum Administration for War may issue in its own name further restrictions or limitations on the use of priorities assistance by operators in the petroleum industry.

(w) **Communications.** All reports required to be filed hereunder and all communications concerning this order should, unless other directions are given, be addressed:

(1) If in connection with production to the appropriate District Office as set forth in Schedule "C", or

(2) If in connection with other than production, to the Petroleum Administration for War, Interior Building, Washington 25, D. C., Ref: P-98-b.

(3) If by a Canadian operator, to: Office of Oil Controller, Dominion of Canada, Toronto, Canada, Ref: P-98-b.

(x) **Violations.** Any person who will willfully violate any provision of this order or who wilfully furnishes false information to the Petroleum Administration for War or the War Production Board in connection with this order is guilty of a crime and upon conviction may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of or from processing or using material under priority control and may be deprived of priorities assistance by the War Production Board.

The reporting requirements of this order have been approved by the Bureau of the Budget pursuant to the Federal Reports Act of 1942.

Issued this 19th day of October 1943.

WAR PRODUCTION BOARD,

By J. Joseph Whelan,
Recording Secretary.

SCHEDULE "A"

Part 1. One copy of any delivery order for the following items (if the total cost of all items on the order is more than $100) must be submitted for information purposes only to the District Office (or the Office of Oil Controller) where the material is to be used:

(a) Aluminum (in forms and shapes constituting a controlled material).

(b) Rotary bits.

Part 2. Two copies of any delivery order (regardless of amount) must be submitted for the following items:

(a) *Cast iron valves over 12 inches.

(b) *Industrial instruments, control valves, and safety and relief valves.

(c) *Steel valves.

Submit delivery orders (a) in connection with production to the District Office for the District in which the material is to be used; (b) in connection with other than production where no item on the order costs more than $500, to the District Office for the District in which material is to be used, or at the operator's election in which his purchasing office is located; (c) in connection with other than production where any item on the order costs more than $500, to the Washington Office; or (d) if by a Canadian operator, to the Office of Oil Controller. An operator may not place a delivery order with a supplier covering items listed in Part 2 of this schedule until there has been returned to him one approved copy of such order.

Part 3. Two copies of any delivery order (regardless of amount) must be submitted to the Washington Office to obtain priorities assistance for items on List B of Priorities Regulation No. 3. An operator may not place a delivery order with a supplier covering these items until there has been returned to him one approved copy of such order.

This general rule, however, does not apply to two particular types of materials set forth on list B of Priorities Regulation No. 3:

(a) Containers and other special items listed on Schedule "B" of this order. These may be obtained only by following the instructions of Schedule "B."

(b) Laboratory instruments and equipment. These may be obtained under the general MRO procedure of this order, and the filing instructions generally applicable for MRO material should be used instead of the special instructions of this Schedule "A."

SCHEDULE "B"

ITEM	Perference Rating Form	Release or Scheduling Form	Filing Instructions
(a) Cellophane	WPB-541	.....	File with PAW, Washington, Ref: P-98-b.
(b) Gas cylinders (as defined in M-233)	WPB-541	.....	File with PAW, Washington, Ref: P-98-b.
(c) Liquefied petroleum gas storage tanks	WPB-541	.....	File with PAW, Washington, Ref: P-98-b.
(d) Steel shipping drums (as defined in L-197)	WPB-3233	WPB-3233	File with PAW, Washington, Ref: P-98-b.
(e) Wooden shipping containers (as defined in L-232, P-140)	WPB-2408	.....	File WPB-2408 with PAW, Washington, Ref: P-98-b. File this form only if the preference ratings of P-140 are not sufficiently high to obtain delivery at the time the material is needed.
(f) Machine tools (as defined in E-1-b)	WPB-541	.....	File with PAW, Washington, Ref: P-98-b.

SCHEDULE C—INSTRUCTIONS FOR DIRECTING COMMUNICATIONS TO DISTRICT OFFICES

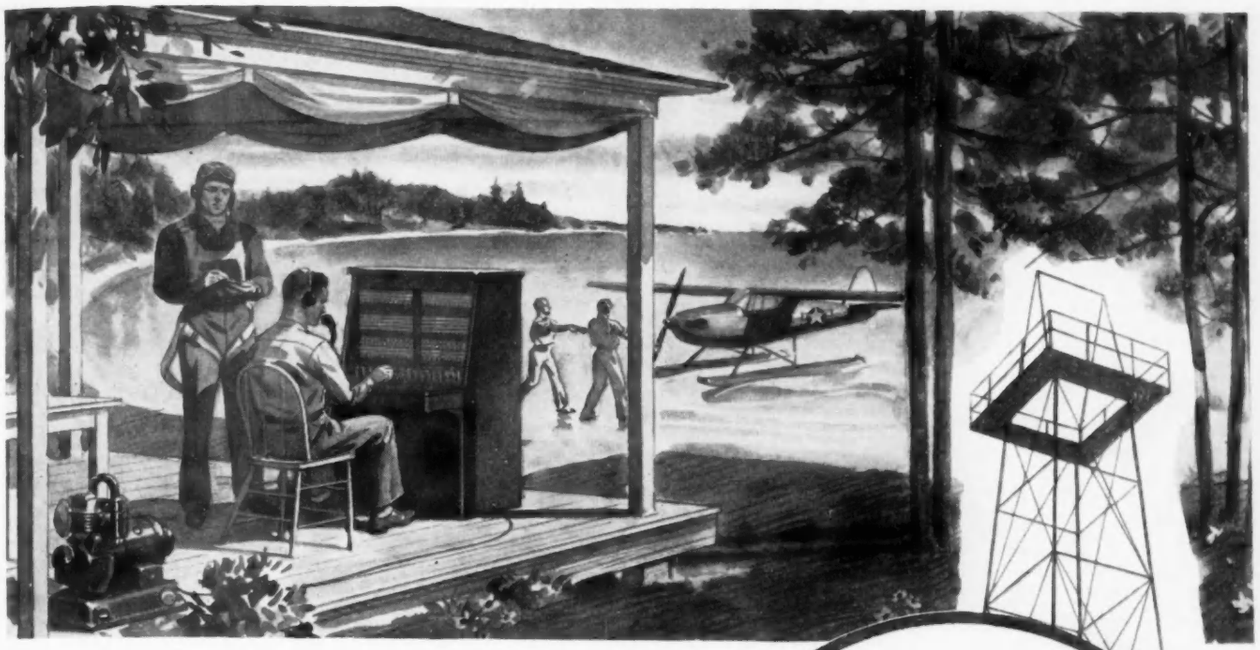
District 1: (Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Pennsylvania, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, District of Columbia). Direct communications to Petroleum Administration for War, 1104 Chanin Building, 122 East 42nd Street, New York 17, New York. Ref: P-98-b.

District 2: (Ohio, Kentucky, Tennessee, Indiana, Michigan, Illinois, Wisconsin, Minnesota, Iowa, Missouri, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota). Direct communications to Petroleum Administration for War, 1200 Blum Building, 624 South Michigan Avenue, Chicago 5, Illinois (or) 410 Beacon Building, 406 South Boulder Avenue, Tulsa 3, Oklahoma. Ref: P-98-b.

District 3: (Alabama, Mississippi, Louisiana, Arkansas, Texas, New Mexico). Direct communications to Petroleum Administration for War, 245 Mellie Esperson Building, Houston 1, Texas. Ref: P-98-b.

District 4: (Montana, Wyoming, Colorado, Utah, Idaho). Direct communications to Petroleum Administration for War, 320 First National Bank Building, Denver 2, Colorado. Ref: P-98-b.

District 5: (Arizona, California, Nevada, Oregon, Washington, Territory of Alaska). Direct communications to Petroleum Administration for War, 855 Subway Terminal Building, Los Angeles 13, California. Ref: P-98-b.



POWER TO WIN

The applications of Continental Red Seal Engines are many. But, each type of engine is specifically designed and built for the job to be done.

Whether the engine is built for small battery-charging units or for heavy-duty oil field work, you will always profit by extra values that can only come from nearly one-half century's experience in building dependable Red Seal Engines.

This war has proved that Red Seal Power is the Power to Win. The Post-War Period will prove it again.

Your Dollars Are Power, Too!

Buy War Bonds

ARMY E NAVY

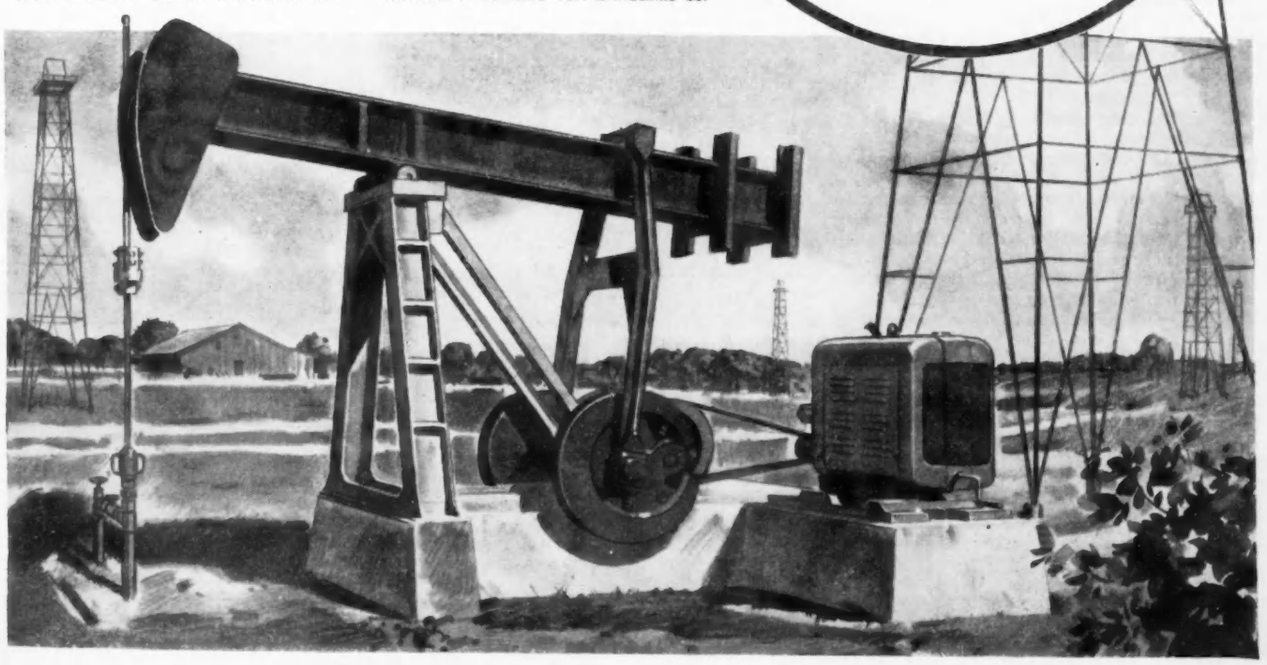
Awarded to the Detroit and Muskegon Plants of Continental Motors Corporation for High Achievement.

Continental Motors Corporation
MUSKEGON, MICHIGAN

Continental
Red Continental Motors — Powered the Air Fleet of the United Nations — America's Standard ***Seal***
Engines

Sales and Service Facilities:

DALLAS: National Welding & Grinding Co.
HOUSTON: C. Jim Stewart & Stevenson Co.
WICHITA FALLS: Wichtex Machinery Co.
LONGVIEW: Standard Tool & Machine Co.



"Oil Goes to War" Theme of API Program Arranged for Annual Session at Chicago

The role of petroleum as supplier of the essential materials to fuel and power our gigantic war machine, at home and on all the battlefronts, will monopolize most of the sessions of the twenty-fourth annual meeting of the American Petroleum Institute, which will be held at the Palmer House in Chicago, November 8 to 11, 1943.

At this second wartime convention of the petroleum industry Army, Navy, and Coast Guard officers, and executives from the Petroleum Administration for War, the War Production Board, and other government agencies, as well as the new national commander of the American Legion, will join oil men in reporting on the state of the nation with respect to petroleum in war. Speakers at two general sessions and at most of the nine group sessions will review what has already been accomplished, and will outline what must still be done in the days ahead before victory.

Petroleum Administrator for War Harold L. Ickes will address the second General Session on Thursday afternoon, November 11.

The first General Session, on Wednesday afternoon, November 10, will hear Deputy Petroleum Administrator for War Ralph K. Davies, WPB Rubber Director Bradley Dewey, and Warren H. Atherton, national commander of the American Legion. Institute President W. R. Boyd, Jr., will lead off this session with the president's annual address.

As with the wartime convention last year, divisions and departments are moved up so that sessions will conclude Thursday afternoon — shortening the meeting to four days from the usual five.

A group session on wartime protection of petroleum facilities—including worker training, fire protection, safeguarding of wharves and piers, and internal security—will be held Tuesday morning, November 9, and will hear A. A. Jergins of the Petroleum Administration for War, Captain Norman B. Hall of the Coast Guard, and Colonel George K. Engelhart of the provost marshal general's office.

Three refining group sessions, Tuesday afternoon, November 9, and Wednesday and Thursday mornings, November 10 and 11, will consider the wartime refinery cooperation and technologic team work between petroleum refiners and the Petroleum Industry War Council and the Petroleum Administration for War, as well as recent developments in research and in catalytic cracking. These sessions will hear papers on cracking-coil tubes in war plants, the role of the analytical chemist in war, and the activities of advisory committees working on problems of aviation gasoline and lubricating oils.

One refining session will consider reports on two of the Institute's projects in fundamental research, viz., (1) hydrocarbons in the gasoline fraction of seven representative crude oils, and (2) the synthesis and properties of hydrocarbons of high molecular weight. This session also will hear about the Houdry adiabatic process for conversion of petroleum hydrocarbons, and will conclude with a paper on cracking with catalysts. One entire session will be devoted to catalytic cracking.

The Division of Production will hold 5 group sessions Tuesday afternoon and evening, November 9, and Wednesday and Thursday mornings, November 10 and 11—which will consider wartime problems of producing oil, drilling and production practice, internal corrosion of gasoline pipe lines, as well as the manpower shortage.

The Tuesday afternoon session will be devoted to a symposium on secondary recovery — a subject which has been under intensive study by institute production committees for the past several years. In view of impending shortages of crude oil, the raising of a supplementary supply from the oil left in the reservoir, after present known or primary methods of flowing and pumping have brought up all they can, daily becomes more important.

An interesting feature of the Wednesday morning production group session will be a talk by Burt E. Hull of War Emergency Pipelines, Inc., on the building of the "Big-Inch," world's largest crude-oil pipe line.

General and group sessions, as at previous annual meetings, will be open to all oil men, whether they are members of the institute or not. Everyone attending will be requested to register, for which there is no charge.

Approximately 50 institute standing and special committees will meet throughout this second wartime convention, beginning Friday afternoon, November 5, through Thursday, November 11; but only those committees will meet whose work is directly contributing to the industry's war effort.

The institute's board of directors will meet Wednesday morning, November 10, and the executive committee Thursday morning. A total of 55 directorships expires this year. The board of councilors, which will nominate 47 members for election to the board of directors to replace an equal number, will meet Wednesday morning; and their election by the membership will take place at the general session, Wednesday afternoon. The other eight will be elected by the board itself.

At the close of their Thursday morning group sessions, the Divisions of Production and Refining will elect 20 members of their respective general committees.

The institute's registration desk, which will be open throughout the meeting Monday morning through Thursday afternoon, will be in the foyer of the Grand Ball Room on the fourth floor of the Palmer House; and a press room for the convenience of the trade and general press will be provided in Room 402.

As at last year's meeting, there will be no annual dinner. On Wednesday night, November 10, visiting oil men and their friends will be invited to view two color motion pictures on oil in war —one of them on the "Big-Inch" Pipe Line—to be shown in the Grand Ball Room of the Palmer House through courtesy of The Barrett Division, Allied Chemical and Dye Corporation.

South American Conference On Liquid Fuels Postponed

A petition of the Argentine Section of the South American Institute of Petroleum (I.S.A.P.) has resulted in postponement of the First South American Conference on Liquid Fuels, to April, 1944.

The reason given for postponement was that the technical delegations of North America had not had sufficient time in which to prepare for attendance at the meeting which had previously been set for this October.

Fuel Utilization Theme of ASME Meeting in Pittsburgh

Wartime and post-war fuel problems will dominate the seventh joint fuels conference of the Fuels Division of the American Society of Mechanical Engineers and the Coal Division of the American Institute of Mining and Metallurgical Engineers in Pittsburgh, Pennsylvania, October 28-29. The meeting will be held under the auspices of the Pittsburgh Sections of the two organizations.

The convention will open Thursday morning October 28 with an address of welcome by Harry M. Moses, president of H. C. Frick Coke Company. Harold V. Coes, of New York, president of the ASME, will respond.

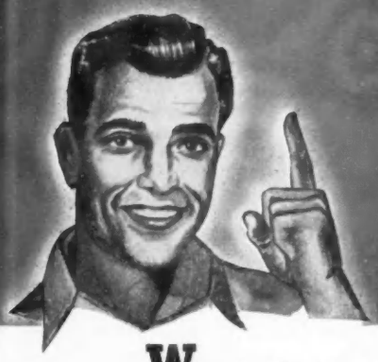
This will be followed by a technical session on coal research. Papers will be presented on "The Progress of Research in Coal Utilization" by E. R. Kaiser, of the Battelle Memorial Institute, and "Test Methods for Rating the Performance of Domestic Stoker Coals," by R. Helfinstine, of the Illinois Geological Survey. A panel discussion on "Selling Coal Research and Its Product" will be led by J. E. Tobey, of the Upper Monongahela Valley Association.

At the luncheon on Thursday Henry F. Hebley, director of research of the Pittsburgh Coal Company, who is chairman of the Fuels Division of the ASME, will talk on his recent sojourn of six months in New South Wales in the interests of oil production for the war effort. This was carried out under the jurisdiction of the Board of Economic Warfare and the Petroleum Administrator for War. Hebley's career covers a lifetime of mining and industrial work carried out in Russia, Great Britain, United States, Canada, Australia and New Zealand.

Thursday afternoon's session will include papers on "Modern Training for the Miners at the Face," by G. R. Spindler of the University of West Virginia, and "Coal Faces Post-War Adjustment," by R. M. Weidenhammer, of the Cosgrove Coal Company.

Colonel James L. Walsh, of New York, chairman of the War Production Committee of the ASME, will be the speaker at the banquet Thursday evening. The Percy Nicholls Award will be presented to Henry Kreisinger of Combustion Engineering Company.

On Friday there will be a panel discussion on "Trends in Fuel," and papers on "Utilization of Producers Gas in Industrial Furnaces," by D. B. Hendryx, Harbison Walker Company; "Sources of Pressure Occurring During the Carbonization of Coal," by G. C. Soth and C. C. Russell, Koppers Company; "Lab-



THE TRUCK WITH THE PLUS QUALITY

FOR THE MOST DIFFICULT SERVICES

Why do the men in the armed services of our own, and other countries, prefer Marmon-Herringtons, so generally, for the extra-difficult jobs? Possibly because Marmon-Herrington *All-Wheel-Drive* trucks are *not war babies,* having had the "bugs" worked out in more than ten years of manufacture before the war began. Marmon-Herrington led the industry in improving the design and performance of heavy-duty multiple-drive trucks, following the first world war. It was Marmon-Herrington, too, that originated the conversion of standard mass production trucks and passenger cars (forerunners of the modern Jeep) to *All-Wheel-Drive* years before the present war started. Naturally, these pre-tested vehicles provided superlative performance from the start, and endeared themselves to thousands of men who will demand the same "plus qualities" in the trucks they drive when the war is over. Their assurance will be the name, Marmon-Herrington, when they buy.

WHAT HAVE YOU DONE FOR VICTORY TODAY? *BUY WAR SAVINGS BONDS*

MARMON-HERRINGTON

All-Wheel-Drive

MARMON-HERRINGTON CO., Inc., INDIANAPOLIS 7, INDIANA

Cable Address: MARTON

oratory and Field Tests on Coal-in-Oil Fuels," by J. F. Barkley, U. S. Bureau of Mines; A. B. Hersberger, The Atlantic Refining Company; and L. R. Burdick, U. S. Bureau of Mines.

Oil Field Water Problems to Be Discussed at AIME Meet

A symposium on oil-field waters and oil-field-brine disposal is being planned to take the form of a joint meeting of the Houston, East Texas, Austin, and College Station sections of the American Institute of Mining and Metallurgical Engineers to be held at the Stephen F. Austin Hotel in Austin in connection with the annual fall meeting of the Texas Academy of Science, November 12.

The following members of the institute will take part in the program: Charles Warner, chairman of the Petroleum Section, Houston Oil Company; W. S. Morris, East Texas Salt Water Association; L. H. Dial, East Texas Salt Water Association; F. W. Jessen, Humble Oil and Refining Company; F. W. Rolshausen, Humble Oil and Refining Company; F. M. Bullard, University of Texas; Paul Weaver, Gulf Oil Corporation; W. N. White, United States Geological Survey; Fred Barclay, University of Texas; Harry Power, University of Texas; I. W. Alcorn, The Pure Oil Company; R. W. Erwin, Salt Water Control, Inc.; J. M. Bugbee, National Lead Company.

A well attended meeting is hoped for, with much discussion of water problems, emphasizing the importance of water disposal and the need of more intensive work on hydrology. In addition to the program of papers and discussion, there will be a noon luncheon with an illustrated lecture by Dr. Fred Bullard on the new active volcano in Mexico, and a smoker in the evening with appropriate entertainment.

C. V. Millikan Gets Lucas Gold Medal

Charles V. Millikan, chief petroleum engineer for Amerada Petroleum Corporation, Tulsa, was awarded the 1944 Anthony F. Lucas Gold Medal by the board of directors of the American Institute of Mining and Metallurgical Engineers, meeting in Chicago, October 18.

In presenting the name of Charles V. Millikan to the board of directors of the Institute, William B. Heroy, chairman of the Anthony F. Lucas Gold Medal Committee, offered the following citation:

"For his outstanding contributions to engineering in the development and production of petroleum. For his studies of reservoir behavior and his many published papers advancing the art of reservoir control. For his work in appreciating the need for an instrument capable of determining reservoir pressures, in developing a gauge for recording bottom-hole pressures, and in teaching its use. For his long and effective service to the Institute in the Petroleum Division."

The award will be given Millikan at the annual meeting of the Institute in New York in February, 1944.

Millikan is the sixth recipient of the Anthony F. Lucas Award, the first having been made to J. Edgar Pew in 1937. The medal was established in 1936. Income of the fund in excess of that required for such medals as may be awarded from time to time may be used for scholarships or other purposes to promote the welfare of the Petroleum Division of the Institute.

C. V. Millikan

Other recipients of the Anthony F. Lucas Gold Medal have been Henry L. Doherty (deceased), in 1938; Everette DeGolyer, in 1940; Conrad (posthumously) and Marcel Schlumberger in 1941, and John R. Suman in 1943.

Millikan was born at Morrison, Oklahoma, on February 19, 1896. He was educated at the Oklahoma A. & M. College, and the University of Pittsburgh. He entered the Mid-Continent oil fields in 1917, immediately after he was graduated from the A. & M. College in Oklahoma, and then joined the Navy during the first World War, after which he entered the University of Pittsburgh and after graduation in 1920 he gathered experience in field geology in the Appalachian oil fields until 1922 when he returned to Oklahoma. There he joined Amerada Petroleum Corporation, the organization with which he is now associated.

Louisiana-Arkansas Section Meets at Shreveport

The Louisiana-Arkansas Division of the Mid-Continent Oil & Gas Association will hold its annual membership meeting in Caddo Hotel, Shreveport, at 10:00 a.m., Friday, October 29. Election of the division's executive committee for 1944 will be held.

At the close of the membership meeting, the newly-elected executive committee will meet to elect officers and members of the standing committees and to act on the report of the finance committee relative to budget matters for 1944.

There will be a luncheon at 12:15 at which invited members of the I.P.A.A. will be guests.

The afternoon program begins at 1:30 p.m. and is open to all oil men, whether or not they are members of the association, or the I.P.A.A., as a service to the oil industry throughout this area.

J. C. Hunter, president of the Mid-Continent Oil & Gas Association, will discuss the situation in Washington. N. H. Wheless, of the American Association of Oilwell Drilling Contractors, will present a picture of the drilling contractors' problems, including those dealing with manpower. R. V. Shirk will discuss manpower problems, and related wage and stabilization problems, now confronting the petroleum industry, and the probable effect upon the industry if these problems are not solved. Clarel B. Mapes, general secretary of Mid-Continent Oil & Gas Association, Tulsa, will discuss various national defense, tax, and other matters.

Navy Needs Oil Men For Special Service

The United States Navy has three specialist openings for men to serve as commissioned officers in the Naval Reserve who must be selected from the oil industry.

Men with practical experience in refineries as operators who have a chemical engineering background and experience in the design of refinery equipment for the manufacture of fuels and lubricants are needed as planners and technical advisors in the refining of bunker fuels, diesel fuels and gasolines for military use. Men up to 50 years of age may be taken in this program.

Another special program is for engineers, either chemical or petroleum who have had actual refinery and laboratory experience in the analysis of petroleum products. The duties of officers appointed under this program will not be limited merely to those of inspection but will extend to preventive maintenance, the application of petroleum products and to the development of new products. The age limit for this class is from 23 to 45 years.

Water front oil terminal supervisors are also needed. These men must have had several years experience in a water terminal storage plant in a supervisory capacity and must have a knowledge of the loading and unloading of ocean-going tankers of large capacity. Exceptional business experience will be given consideration in lieu of college training.

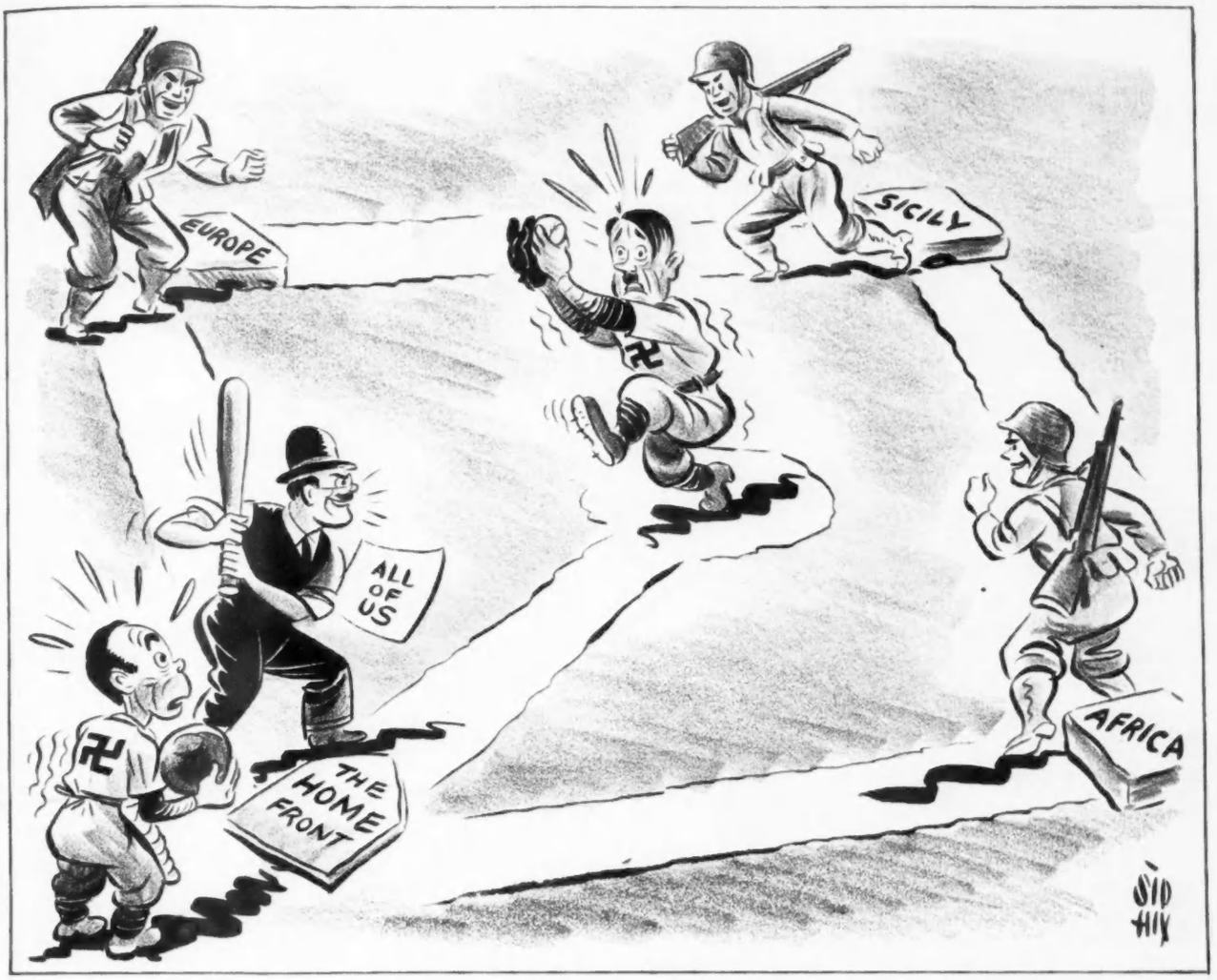
While the above are the only specialist openings for oil men at this time, there are several open billets for physically qualified petroleum, chemical, and geological engineers not over 35 years, who may be quickly trained for other types of duty.

The ranks assigned are based upon age and experience. Those interested may apply at the Office of Naval Officer Procurement, 824 Niels Esperson Building, Houston, Texas, or 1530 Allen Building, Dallas, Texas, or any other Officer Procurement office.

Important Tests Planned for New Ontario Areas

Ontario's most important drilling undertaking in many years is being launched in the James Bay area, in the northern end of the province, where MacDyke Oil & Mining Industries, of Toronto, is planning exploration and development work in the Moose River basin.

The company controls 9 square miles, which are known to contain extensive oil shale deposits, with good prospects of free oil. Development will follow satisfactory preliminary exploration.



MEN ON BASES CALL FOR *SPECIAL* EFFORT!

Yes, we have men on bases—in Africa, in Sicily, in Europe and in many Pacific islands. But men on bases don't win ball games. To score a victory, we've got to drive them home, and that calls not for a slowing down of effort but for the full use of all of the energy, all of the strength and all of the skill we possess . . . Gaso Pump & Burner Mfg. Co., 902 East First Street, Tulsa, Oklahoma. Export Office: 149 Broadway, New York. Shreveport: W. L. Somner Co., 419 Lake Street. Los Angeles: Service Oil Field Supply Co., 5333 S. Riverside Drive.

GASO PUMPS

FOR EVERY OIL INDUSTRY NEED

Plan West Texas Production Boost To Fill Two Pipe Lines Now Building

Texas allowable production during November has been set at 2,021,471 barrels daily by the Texas Railroad Commission. This figure, which includes 1,905,471 barrels of crude oil and 116,000 barrels of other petroleum liquids, is 22,471 barrels above the figure set by PAW for the period. The order provides for 22 producing days in most fields, and 23 producing days for East Texas. Fields heretofore exempt from shut-down days continue as heretofore, with few additions.

Adjustment of allowables between fields in West Texas to supply oil for new lines was the principal subject discussed at the state-wide hearing held in Austin last week. With completion of Stanolind Pipe Line Company and Magnolia Pipe Line Company lines from West Texas, one north, and one east, several adjustments will have to be made.

The lines will carry about 107,000 barrels of oil, and the operators sought Texas Railroad Commission sanction so that they would be sure the oil would be available from the fields from which it must come.

Nominations filed by the operators were up 53,000 barrels, for a total of 2,096,438 barrels for November. The largest increase was 19,000 barrels up for District 8. In District 2, the companies asked for 13,000 barrels more. Meanwhile, the recommendation from PAW provided for production at the same rate as for October, 1,999,000 barrels daily.

The West Texas proposal was presented by Maston Nixon, member of the crude oil supply subcommittee of PAW District 3. He said the study had been made at the request of J. R. Parten, who is in charge of transportation for PAW.

At a meeting September 28 at which representatives of all companies handling crude from the fields affected were present, Nixon reported, the following facts were developed:

The application for Stanolind's 16-inch line included a proposal to construct 35 or 40 miles of new 12-inch pipe from Slaughter to Wasson, but this was refused by WPB. The extension involved 3900 tons of new steel and an expenditure of $1,500,000.

By certain rearrangement of facilities in the Slaughter, Wasson, Seminole, and North Cowden fields, it will be possible to provide oil for both new lines with less than half of the steel required to extend the line to Wasson. The principal construction involved under the proposed plan is 780 tons of new steel for 7 miles of 12-inch pipe to connect Magnolia's Mallett Station with Stanolind's Slaughter Station, 780 tons of steel for 12 miles of 8-inch second-hand pipe to connect Humble Pipe Line Company's Wasson system with the Magnolia line between Seminole and Slaughter, and 735 tons of steel for second-hand pipe to extend for another 10 miles the 8-inch loops now being constructed by Magnolia between its Midland and Andrews Stations. The second-hand pipe is available, and the saving in new steel requirements under the proposed plan worked out by this subcommittee is over 3000 tons. Expansion of gathering facilities in the fields to handle increased volumes should not require substantial quantities of new steel.

The subcommittee's analysis of requirements shows an increase of 107,000 barrels daily needed when the new lines are operating—65,000 for the Stanolind and 42,000 for the Magnolia line. Distribution of this increase in the district according to the allocation formula of the commission would assign more than 55,000 barrels of the increase to four large fields in the Slaughter-Midland area (North Cowden, Seminole, Slaughter and Wasson), and some of the increase would be in fields where the oil could not be made available to the new lines. It therefore was recommended that output of the four fields be increased to 206,000 barrels daily, or 81,200 barrels more than the September allowable. This figure was shown to be well within the efficient maximum rate, and was agreed by the companies involved to be sufficient, considering possibilities of exchanges of oil in other fields which would be increased under the formula. Plans also have been drawn for exchanges in the four big fields to facilitate getting oil in the proper lines with most efficient use of existing gathering systems. The plans so far worked out provide slight inequities in takings from individual fields in ratio to formula allocations, but it is expected that further sales and exchanges between pipe lines will effect taking all the oil allowed each field under the formula, as it is contemplated that after completion of the two new lines it will be necessary for all fields in the area to produce at or near the maximum efficient rate.

Members of the commission questioned Nixon at length concerning the West Texas situation. They wanted to know whether the storage would be available when the lines were completed so that the delays which followed the Big-Inch line would not occur in West Texas. It was estimated that 200,000 barrels would be required to fill the Magnolia line, and 446,744 barrels would be required to fill the Stanolind line, which is 385 miles long. Both companies gave assurance that the storage would be ready, and it was recommended that production in the area be stepped up slowly so that the fields would not be injured.

Magnolia expected to complete its line about March 1, and a month later, the Stanolind line should be completed.

H. P. Nichols requested that East Texas be allowed to produce 20 days during November, and Phillips Petroleum Company asked that the Panhandle be allowed to produce 22 days. During October, the Panhandle was allowed to produce 24 days.

PIPE LINE REVIEW

Big-Inch Again Ready To Operate Full Load

Defects in the northern branch of the Big-Inch from Phoenixville, Pennsylvania, to Linden, New Jersey, have been corrected and the line again is in service after a shut-down of 52 days.

As a result, the 215,000 barrels daily now flowing through the line again is being divided between the two branches, and full capacity of 300,000 barrels is expected to be reached early next month when the last of the pumping stations is put into service.

Breaks were repaired by round-the-clock crews who took over August 19, when the first leak occurred, discovered by filling the 86-mile line with water and increasing pressure until the maximum test pressure was reached or the line broke somewhere. All told, it was said, the procedure was applied 44 times before engineers were satisfied that safe operating conditions had been provided.

Lone Star Completes Loop To Cayuga Gas Field

Completion of a 35-mile extension loop from the Cayuga gas field in Anderson County, to a gate 9.5 miles east of Alma, Ellis County, was announced by the Lone Star Gas Company this week. This loop brings additional natural gas for Dallas and other cities in the 4500-mile pipe line network of the company.

Pipe for the loop was reclaimed from properties south of Sipe Springs, in Comanche County. Material consists of 24.5 miles of 16-inch line and 10.5 miles of 12-inch. The line was relaid by Sharman and Allen, pipe line contractors of Houston. Underwater crossings were made at the Trinity River, north of Trinidad and at Cedar Creek in the same vicinity.

Eastern Oil Supply Slightly Improved

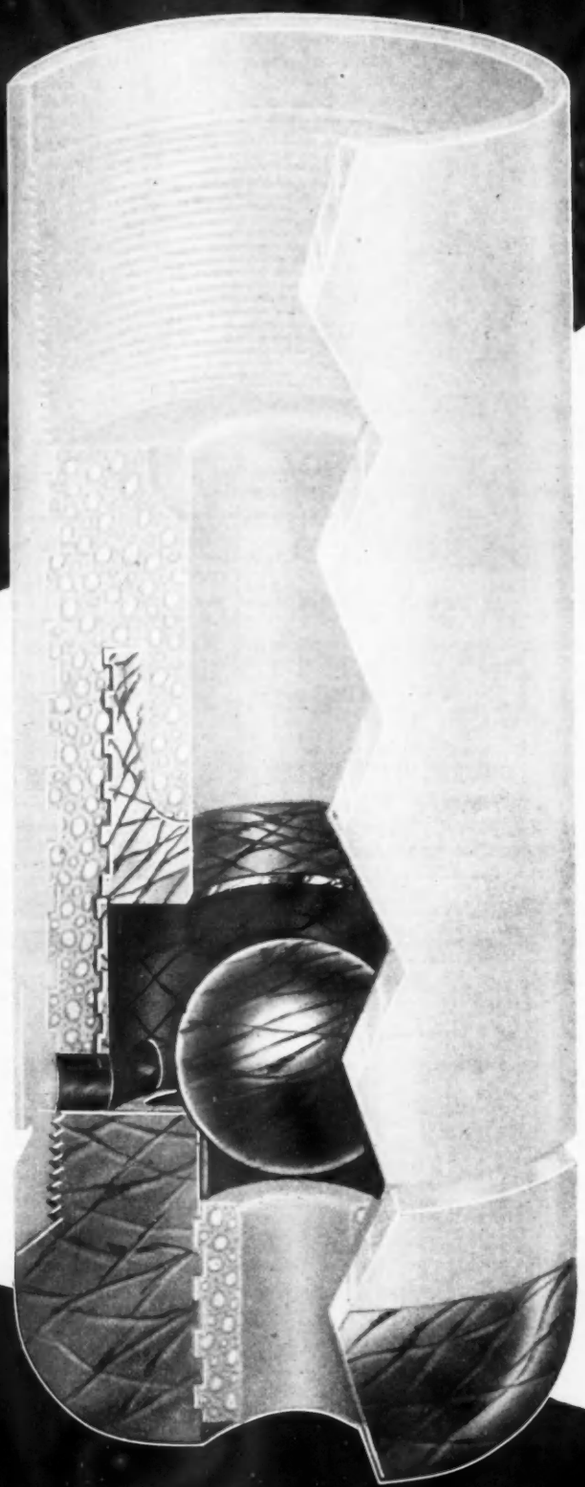
Filling of the Southwestern Emergency Pipe Line was completed October 20, and the line began delivering on regular schedule the following date, with a capacity of 75,000 barrels, PAW was informed last week.

Meantime, the oil agency reported that the East Coast supply situation was "highly encouraging" except for the fact that gasoline consumption, instead of declining to the volume certified, has moved upward and is exceeding certifications by more than 30,000 barrels a day.

Total receipts in the area during the week ended October 16 exceeded 1,154,000 barrels daily, with the re-opening of the New York branch of the Big-Inch bringing pipe line movement to an all-time high of 406,000 barrels. The tank car movement of 748,823 barrels daily was down slightly, as expected when the increased capacity of the Big-Inch permitted the shifting of the rail movement to the longer Texas run.

Inventories of light heating oil increased at the rate of 150,000 barrels daily despite the start of the heating season, and now are above the programmed requirements to supply at least as much heating oil as last year to East Coast consumers.

BAKELITE



Phantom reproduction of Larkin Geyser Float Shoe gives you a better picture of the part BAKELITE has in this better shoe.

AN EXCLUSIVE FEATURE THAT PUT *Larkin* CEMENTING EQUIPMENT IN A CLASS BY ITSELF!

When Larkin introduced BAKELITE for guiding and valve mechanisms, the job of cementing casing was vastly simplified . . . was made immeasurably safer. For 12 years one operator after another has adopted Larkin Floating and Guiding Equipment because of its exclusive offering of Moulded High-Impact BAKELITE. Larkin's BAKELITE development from genuine fabric-base material assures users of getting the following valuable advantages:

HIGH IMPACT STRENGTH . . .
HIGH COMPRESSIVE STRENGTH
ABRASION RESISTANCE
WATER, OIL AND WEATHER RESISTANCE
LOW SPECIFIC GRAVITY
FLEXIBILITY
DRILLABILITY

So much has Larkin improved this originally superior material that no other material for the purpose can rightly be compared to it BAKELITE is one of several good reasons Larkin has consistently produced better floating and guiding equipment

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LARKIN

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Stocks Continue Downward Trend Despite Continually Mounting Production and Runs

Stocks of gasoline and residual fuels in the nation showed a further decline for the week ending October 16, despite near record runs to stills and the setting of a new high in daily crude oil production.

The downward curve in the supply of available gasoline reflects a condition of six months standing, brought about by heavy military demands on all grades of gasolines. Although the week's gasoline production mounted to 12,358,000 barrels as compared with 11,252,000 barrels one year ago and 12,206,000 barrels one week ago, stocks dropped 1,526,000 barrels to 68,182,000 barrels, as against 69,708,000 barrels one week ago and 76,587,000 barrels one year ago.

Although refineries are currently operating at near capacity levels and new units are coming into production, the outlook for any appreciable accumulation of stocks is not promising. If anything, there are portents that further drains will be made in the stockpile soon. Another factor entering into the picture, however, is the diversion of considerable crude oil to the making of war products other than gasolines.

The residual fuels stocks stood at 65,518,000 barrels as against 66 585,000 barrels for the previous week and 78,762,000 barrels one year ago. During the same period production of residuals showed a decrease, being 7,608,000 barrels for the current week as compared with 7,795,000 barrels for the previous 7-day period and 7,054,000 barrels one year ago. The outlook likewise for these products is not brightening.

The nation's crude oil producers opened flow valves a little wider to set a peak production total of 4,412,000 barrels for the week ended October 16. This figure is a slight gain over the 4,390,000 total established for the preceding week, and indicates the upward spiral of production. This current upward gain is expected to climb even higher the remainder of this year as refiners attempt to hold the line against further inroads into the declining gasoline stocks, and as other demands are made for petroleum products.

The gasoil and distillate situation was improved from an accumulation standpoint, however, the picture is more erratic than the current plunge of gasolines. Stocks of gasoil and distillate were at 42,237,000 barrels as against 41,304,000 barrels for the previous week and 47,258,000 barrels one year ago. Production stood at 4,616,000 barrels one week ago compared with 4,265,000 barrels for the past week.

The trend in the index of all petroleum products is downward in amount of available stocks while current production figures are soaring to new highs. How much longer this trend will continue depends entirely upon military conduct.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED October 23	October 16
Arkansas	78,350	78,450
California	790,150	788,800
Long Beach	30,950	30,300
Midway-Sunset	56,000	55,350
Kettleman Hills	42,100	41,400
Wilmington	93,400	94,200
Rest of State	567,700	567,550
Colorado	7,300	7,350
Illinois	223,650	208,900
Salem	29,550	28,100
Louden	40,350	32,150
Other New Pools	142,550	137,650
Old Pools	11,200	11,000
Indiana	13,900	14,150
Kansas	284,750	296,950
Kentucky	22,950	26,500
Louisiana	360,250	360,750
North Louisiana	81,050	81,500
South Louisiana	279,200	279,250
Michigan	55,100	54,700
Mississippi	47,100	46,450
Missouri	95	95
Montana	21,376	22,579
Nebraska	1,700	1,700
New Mexico	112,700	109,500
New York	13,900	13,650
Ohio	9,100	8,750
Oklahoma	326,500	326,450
Oklahoma City	51,750	51,900
Seminole Area	73,400	74,200
Rest of State	201,350	200,350
Pennsylvania	42,650	40,700
Tennessee	35	35
Texas	1,892,350	1,892,200
Upper Gulf Coast	519,500	519,300
East Texas Field	368,500	368,750
Rest of Eastern Texas	135,350	135,300
Lower Gulf Coast	189,250	189,100
Southwest Texas	78,600	78,550
South Central Texas	20,700	20,500
West Texas	354,000	354,200
North Texas	138,450	138,250
Panhandle	88,000	88,250
Utah	10	12
West Virginia	9,300	9,400
Wyoming	106,250	105,150
Total United States	4,419,466	4,413,221

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.
(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Week Ended	Runs to Stills Barrels Daily	Week Ended	Crude Stocks Barrels	Week Ended	Gasoline Stocks Barrels	Week Ended	Gas Oil & Distillate Stocks Barrels	Week Ended	Residual Fuel Oil Stocks Barrels	Week Ended
Highs:												
1939	3,910	8– 5	3,650	10–21	278,607	5–26	87,769	4–22	39,562	10–28	116,237	8–26
1940	3,890	3–16	3,690	6–22	265,865	8–31	102,817	4–20	49,051	10–19	109,135	9–14
1941	4,337	11–22	[1]4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	49,861	11–14	95,857	1– 3
1943	[1]4,412	10–16	4,227	8–28	245,752	5–29	94,159	3–20	42,913	1– 2	72,881	1– 2
Lows:												
1939	[2]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 8
1940	3,335	11–30	3,370	1– 6	237,339	1–27	79,847	11– 9	23,551	4– 6	102,344	2–10
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,381	4–12	90,914	7–12
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–13	232,191	1– 9	68,182	10–16	30,732	4– 3	65,518	10–16

TRENDS OF 1942 AND 1943

Trends in Week Ended:	Crude Oil Production Daily	Runs to Stills Daily	Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gas Oil & Distillate Production Weekly	Gas Oil & Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1942:									
January 3	4,038	3,961	244,440	13,797	92,987	3,855	49,357	6,918	95,857
January 31	3,871	3,848	250,740	13,292	97,810	3,817	40,674	6,640	91,189
February 28	4,016	3,675	259,373	12,131	105,635	3,799	34,547	6,813	88,285
March 28	3,820	3,667	263,208	11,663	105,624	3,661	31,756	6,344	83,045
April 25	3,581	3,506	257,073	10,535	102,897	3,267	29,240	6,869	81,107
May 30	3,877	3,522	255,023	10,478	95,355	3,034	31,384	6,993	79,628
June 27	3,719	3,581	253,364	10,713	88,396	3,549	32,851	6,615	77,304
July 25	3,691	3,658	249,262	10,864	82,281	3,647	35,966	6,796	77,816
August 29	3,964	3,697	249,007	11,300	80,831	3,850	42,060	6,875	78,034
September 26	3,909	3,802	242,785	10,954	80,550	4,215	45,945	7,094	78,943
October 31	3,901	3,731	239,266	11,153	79,159	.....	48,131	.....	79,166
November 28	3,878	3,736	234,850	11,269	78,854	.....	49,739	.....	77,796
1943:									
January 2	3,871	3,734	233,938	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	4,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 28	4,196	4,227	236,170	12,420	72,525	4,351	37,928	8,732	67,250
September 25	4,344	4,156	233,013	12,206	70,024	4,608	40,328	8,560	66,659
October 2	4,328	4,159	234,643	12,414	70,128	4,566	40,898	8,483	66,407
October 9	4,390	4,094	233,471	12,206	69,708	4,616	41,304	7,795	66,585
October 16, 1943	4,412	4,171	.....	12,358	68,182	4,265	42,237	7,608	65,518
October 17, 1942	3,902	3,708	[4]239,121	11,252	76,587	4,258	47,258	7,054	78,762
Change:									
In week	+22	+77	—1,172	+152	—1,526	—351	+933	—187	—1,067
In year	+510	+463	—5,650	+1,106	—8,405	+7	—5,021	+554	—13,244
In year	+13.1%	+12.5%	—2.4%	+9.8%	—11.0%	+.16%	—10.6%	+7.85%	—16.8%

[1] All time peak. [2] Lowest since April, 1922. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent States. [4] Stocks, October 10, 1942.

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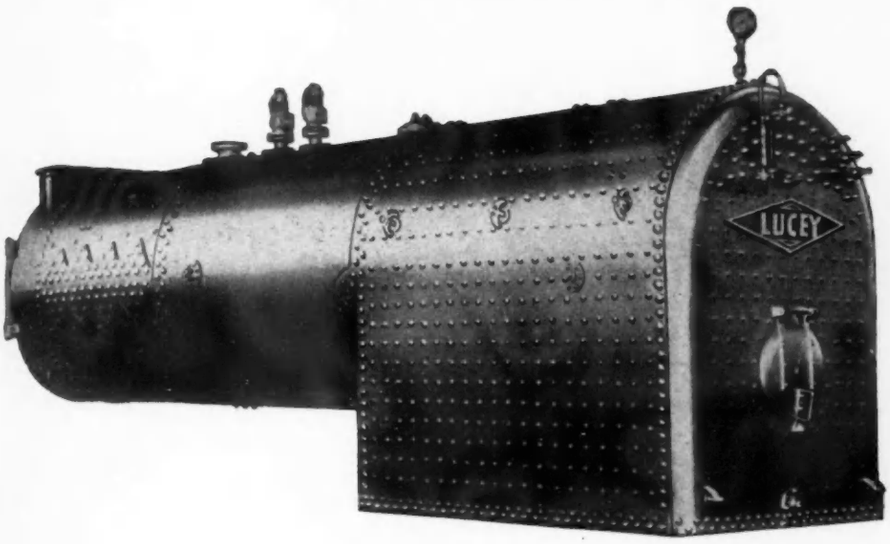

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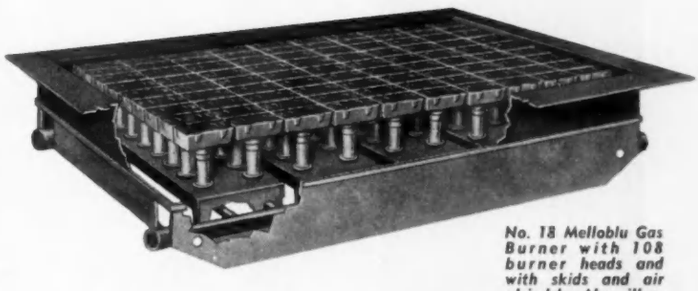

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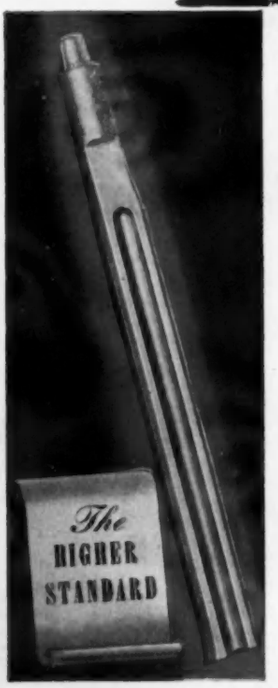

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Crude Production Hits Another New High

The rise of daily average production of crude oil in the United States continued during the week ended October 23, with an increase of 6,245 barrels to culminate in a new-high total of 4,419,466 barrels, as compared to a total last week of 4,413,221 barrels.

The slight increase in production was mainly due to the efforts of Illinois which showed an increase of 14,750 barrels of crude, rising from a total last week of 208,900 barrels to 223,650 barrels this week.

However, this increase, along with other small ones from New Mexico, 3,200 barrels, Pennsylvania, 1,950 barrels, and California, 1,350 barrels, was offset by a sharp decrease in the production of Kansas which fell from 296,950 barrels of last week to 284,750 barrels this week.

Mexican Government Plans Increased Oil Activity

Petroleos Mexicanos of Mexico City has begun a program of intense work on activities, other than the normal operation of oil extraction in producing areas, which are counted on to widen the scope of the oil industry and increase the petroleum resources of the country, according to the *Mexico City Post.* This program was inspired by increasing domestic demands and the necessity of supplying other Latin American countries and the United Nations in the war effort.

A story in the Mexican paper states:

"The program, approved at a meeting at Pemex's headquarters of its geologists and 23 chiefs of its departments and geological parties, includes drilling exploration wells in zones surveyed by plane. The company has imported from the United States two modern seismological and gravimetry apparatus as well as drilling equipment and machinery. The meeting was attended by E. DeGolyer and Arthur MacNaughton, geologists from the United States, who have been retained as technical advisers of Pemex.

"Efrain Buenrostro, managing director of Pemex, recently returned from a four-months' stay in the United States, where he arranged for credits for the machinery, equipment and materials to be obtained by his company. He asserted that the future of the Mexican industry is brilliant and that new geological structures recently discovered assure a widening of the country's oil regions.

"The company has taken steps to improve the field camps of engineers and laborers so as to insure a high standard of efficiency and a greater yield from their activities."

Vermillion Field Well Makes Unusual Flow

Vermilata Oils, Ltd.'s Cannar 17, the biggest oil well in Canada outside of Turner Valley, has been brought into production in the Vermillion field, flowing 350 barrels the first 24 hours. A flowing well in the Vermillion field is rare, although the Vermilata 2 flowed 60 barrels daily when first brought in. After being placed on pump it is now yielding about 35 barrels daily. Vermilata 4, a west offset to Cannar 17, was started October 11. Spacing in the field is 10 acres.

U. S. Field Operations

Illinois

Fayette County Wildcat Will Make 150 Barrels

J. J. Callahan and associates' Littleton 1, NE SW 22-5n-4e, in the southeastern part of Fayette County, a good many miles from prolific production in the Louden pool, is waiting on cement after setting casing for a test of Benoist sand which showed for production on a drill-stem test of pay encountered at 2346-58 feet. The well is expected to make a 150-barrel producer when completed.

White County: Slagter and others' Sefried 1-A, NW SE SW 30-3s-11e, is showing for a discovery well in Biehl sand which was topped at 1850 feet. On drill-stem test, the well yielded 180 feet of oil, 330 feet of water and some salt water in one hour. Casing was set to 1919 feet with total depth 2400 feet.

Gulf Refining Company has abandoned Connery 1, SE SE NW 1-5s-8e, which for a time appeared a pool opener in McClosky lime. Dwindling oil yield and increasing water content brought the decision.

Jefferson County: Nash Redwine's pool opener just south of Mt. Vernon, the Casey 1, NE SW NE 6-3s-3e, is testing McClosky lime after drilling deeper to 2810 feet. Before deepening the well swabbed 90 barrels of oil in 4½ hours. This production was increased to 307 barrels in 8 hours after the hole was deepened and acidized with 1500 gallons. Casing was set to 2803 feet.

Bell Brothers' Indiana National Bank 1, E¼ NE NE 24-1s-3e, a discovery in the McClosky lime, has been completed with initial production of 264 barrels. Pay was found at 2778-82 and 2860-69 feet. The operators were nearing the McClosky at Indiana National Bank 2, E½ SW NE 24-1s-3e.

In the area of the Markham City pool recently extended north by J. H. Williams' Dalton 1, Gulf Refining Company has abandoned H. A. Wood 1 and 2, offsetting the discovery well. Both offsets were dry in the McClosky lime.

Gulf Refining Company apparently has a small pool opener more than a mile from production at Stahler 1, NW NE NE 23-1s-4e. The well swabbed 60 barrels of oil and 2 barrels of water in 8 hours after 3000 gallons of acid in McClosky lime at 2916 feet.

Richland County: James L. Black's Hunt 1, SE NW 10-3n-9e, a discovery well 1½ miles northeast of Noble and south of production in the Noble township pool, swabbed 235 barrels of oil in 17 hours from Cypress sand at 2572 feet. This probably will be considered an extension of the Noble township pool.

Cumberland County: Sohio Producing Company has abandoned Wylde 1, SE SE NW 15-9n-9e, near Greenup, at 2680 feet after the McClosky and shallower formations were found dry.

Edwards County: Whisenant & Trenchard and associates' Ina Dunk 1, NE SE SE 26-2s-10e, a Waltersburg sand discovery, is cleaning out after a 35-quart shot at 2381-2402 feet. The well swabbed 42 barrels in 24 hours while cleaning out.

Shelby County: Aylward Petroleum Company's Moran 1, NE NW 27-10n-5e, an extension for the Stewardson pool, has drilled deeper in the Aux Vases to 2355 feet. Testing continued after the hole filled 1000 feet with oil in 12 hours.

Coles County: D. M. Davison and C. W. Davey's Scott 1, SE SE SW 31-12n-8e, a wildcat 3 miles south of Mattoon on the Mattoon structure, is drilling below surface pipe, and Lario Oil & Gas Company's Scott 1, SE SW NE 25-12n-7e, ½ mile east of a recent Aux Vases sand discovery just south of Mattoon, has pits dug.

Indiana

Lake County Wildcat Has no Encouraging Shows

The only wildcat of interest in Indiana this week was drilling below 2000 feet and no worthwhile shows had been reported. It was Peter Fox and Sons' Carstans 1, NE NE NE 5-32n-9w, 70 miles southeast of Chicago in Lake County. The well is slated for 2500 feet.

Operations moved up from 70 to 72 and included 32 wildcat tests, the same number as last week. First reports fell from 9 to 5 and one of those was a wildcat.

Three wells were completed, 2 for total initial production of 315 barrels daily. The other well was abandoned.

Kentucky

Ohio County Wildcat Pumping from McClosky

Ashland Refining Company had a pool opener in prospect this week at J. T. Hoover 1, 13-M-31, in Ohio County, with production from the McClosky lime, in which pay was found at 1226 feet. The well was pumping 20 barrels of oil daily and no water with total depth 1230 feet. The well was placed on pump without lengthy testing. Nearest production is in the Utica pool 15 miles west and the Livermore pool 20 miles southwest.

Operations in the state totaled 79 this week, an increase of 1 from last week. Thirty-three of the operations were wildcats.

Eighteen first reports were recorded as compared with 15 during the previous week and they included 5 wildcats.

Seventeen wells were completed including 5 dry wildcats. Eight oil producers were completed for a total initial production of 1658 barrels daily.

Indian Lease Sale

A sale of oil and gas leases on restricted lands in central and southern Oklahoma is scheduled for November 16 when bids will be opened at the office of A. M. Landman, superintendent, Five Civilized Tribes, at Muskogee. Two tracts are being offered in Creek County, 10 in Okfuskee, 6 in Hughes, 2 in Seminole, 11 in Garvin, and one each in Stephens and Carter counties.

Oklahoma

Cleveland County Wildcat Has Oil in Second Wilcox

Mid-Continent Petroleum Corporation's Harris 1, NE SE SW 29-10-3w, Cleveland County, has been hailed as an important strike southwest of the Oklahoma City field and on the down flank of the Nemaha Ridge of faulting. The well had Viola lime at 8360 feet and Simpson dolomite at 8534 feet, missed the First Wilcox sand and drilled into the Second Wilcox at 8780 feet. A core from 8782 feet to 8787 feet gave a 4-foot recovery of sand with a gas odor and taste. A second core showed 3 feet of soft Wilcox sand, well saturated. On brief test the well began making oil in 19 minutes after first showing initial gas. As the well settled to a steady flow it was shut in. Structural conditions were worked out by Seismograph and subsurface correlations. While there is no measure available by which to judge the approximate size of the structure, it is believed the field will measurably exceed the size of the average discovery for the state.

A new field has been proved in Pottawatomie County where Watchorn Oil & Gas Company's Sorrell 1, NW SE 20-6n-3e, flowed into pits on a 15-minute test. The well drilled to 4719 feet after finding the second Wilcox sand dry at 4585 feet, and then plugged back and perforated casing with two shots at 4140 feet with 7-inch landed at 4200 feet. Viola was topped at 4131 and the Simpson Dense at 4184 feet.

Seminole County: A fill-up of 400 feet of oil in a wildcat north of Wewoka apparently indicates a new field for this section of Central Oklahoma. Fred T. Haddock's Davis-Patterson 1, SWc NE 2-8n-7e, drilled saturated Booch sand from 3324 to 3347 feet. Casing has been run for test.

McClain County: Carter Oil Company's Cottingham 1, C SE SW 4-7n-3w, a deep test of the southeastern edge of the Anadarko Basin cored low in the Pennsylvanian to pick up a slight show of oil and a puff of gas. Drilling is being continued.

Canadian County: The most westerly well in West Edmond field, Ace Gutowsky's Watson 1, SEc SW 23-14-5w, failed to show other than brackish water through perforations at 7252-7375 feet with hole bottomed at 7400 feet. The test does not look very good and is apparently off whatever structural feature responsible for West Edmond production.

Oklahoma County: Sohio Producing Company's Cargil 1, C SE SE 30-14-4w, Bartlesville-sand discovery northeast of current development in West Edmond field, continues to swab and test and is making a little less than 100 barrels daily of 43-gravity oil. The same operator's Harper 1, C SE NE 31-14-4w, northwest offset to the field discovery in Hunton lime, made 75 barrels the first hour on completion test through 2½-inch tubing from the lime.

Comanche County: H. N. Conley et al's Hayes 1, SE SE NE 22-4n-11w, near

Elgin, which has shown gas and a spray of oil near 800 feet, higher than in adjacent tests but typical of the erratic geological conditions of the area, has set a protective string at 913 feet and is drilling ahead and encountering additional slight oil shows.

Kansas

One New Field, One Extension; Few Wildcats

Interest in the possibility of expanding the trend of production on Central Kansas Uplift into the northern area of Dodge City Basin where it takes in the northwest 12 counties of the state was increased this week with Kansas City-Lansing shows that may mean another pool northwest of major development. The wildcat test is J. J. Lynn's Webster 1, NW NW NE 34-10-22w, in Graham County, which was dry at 4070 feet in Arbuckle lime. Hole was then tested in the Kansas City-Lansing section of the Pennsylvanian at 3620-3625 feet after 900 gallons of acid had been used and the well produced 6 barrels of 36.3-gravity oil with 3 barrels of water. While this is questionably commercial production, the well will probably show better under a second treatment and careful completion. Water does not necessarily condemn the location for in a number of areas the Kansas City-Lansing carries water in its laminations. The test is 6 miles northwest of Wakeeney production.

McPherson County: Winkler - Koch, Inc.'s J. Anderson 1, C S½ SE NW 23-17-1w, has extended Crowther field north ⅜ mile by completing for the maximum potential of 3000 barrels. Production is from the chat at 2720 to 2742 feet after treating with 3000 gallons of acid. The volume of production from this well indicates favorable possibilities in probable additional extensions to the producing area.

Barber County: Dickey Oil Company's Mills 1, SE SW 32-31-14w, test on an anticlinal feature, showed some slight saturation in Viola lime at 3719-3731 feet. No test was made in drilling through.

Phillips County: Skelly Oil Company's Graham 1, SW SW NW 23-5-20w, completed for 474 barrels in Arbuckle lime at 3522-3524 feet to indicate a probable connection between Ray field production and some undeveloped acreage producing to the northeast of the pool.

McPherson County: Henne field has been extended by Williams and Morine et al's Spillman 2, C S½ NW NW 16-17-1w, which is incomplete but to be tested after an acid treatment at 2620 feet. Upon drilling plugs oil began rising in the hole.

A show of oil in the top of the chat may indicate a new field at W. C. McBride, Inc.'s Fisher 1, C N½ NE SW 1-19-1w, near Canton production. The test drilled the prospective pay at 2821 feet, picked up the show of oil, and ran pipe preparatory to testing.

ROBERT L. WESTBROOK, deputy oil and gas supervisor in charge of the Midland, Texas, division of the Texas Railroad Commission, has resigned to join the Gulf Oil Corporation's staff as a production engineer in West Texas. He is due to be assigned to the Goldsmith field.

North Texas

Two Shallow Oil Strikes In Archer County

West Central Archer County accounted for two shallow oil strikes during the past week. Flowing production was developed by White and Duncan's R. C. Kinder 1, southeast corner of Section 62, Block 5, Clark & Plumb Survey, 4½ miles southwest of Scotland, after drilling plugs from 7-inch at 1240 feet, with sand logged at 1242 to 1250 feet. The well flowed into pits without any estimate being made of its output, and was then shut in for storage and pipe line connection.

Hedrick Oil Company's Carter 1, W½ Section 21, Block 5, Clark & Plumb Survey, five miles southeast of Archer City, filled 700 feet with oil in 12 hours after drilling plugs from the casing set on top of the sand at 875-885 feet. This wildcat is rated a 75- to 100-barrel pumper.

King County: Humble Oil & Refining Company is proceeding with development of its Bateman 37,000-acre discovery block while awaiting completion of tankage for final gauge of the county's first producer. Bateman 1 flowed 30 barrels of 32-33-gravity oil per hour on a brief test after two-stage acid treatment with 4000 gallons at 3688-3703 feet. Bateman 2 is located 5524 feet from the north and 1980 feet from the east lines, Section 101, Block A, John B. Rector Survey, near the discovery. As a logical development this area can be expected to have a pipe-line connection following completion of a few more producers, by Humble Pipe Line Company laying a lateral from its Panhandle-Ranger 10-inch carrier that crosses the east part of the county.

Clay County: Shell Oil Company has given the Joy field its second Strawn sand producer on the southeast edge of the structure in completing Scaling 1, Block 15, H. Williams Survey, flowing 248 barrels initial through open tubing after a 20-quart nitro shot at 3975-4015 feet.

Wichita County: Consolidated Oil Company's Spicer 1, west offset to the company's Airport pool 4400-foot Strawn discovery, has been abandoned at 5381 feet, after perforating nominal shows in the Ellenburger, Bend, and Strawn zones. The 2-well West Pool recently opened near Wichita Falls has a prospective southeast extension through Continental Oil Company's Waggoner 1, W. T. Buntin Survey, having logged lime saturation in coring to 4242 feet and pipe has been set at 4235 feet for a production test.

West Texas

McCamey Deep Test Has Promising Shows

Texas Pacific Coal & Oil Company's Lane 52-A, first deep exploratory test in the old McCamey field, Upton County, is landing pipe on bottom at 8358 feet to test promising oil shows encountered in the Ellenburger Dolomite topped at 8195 feet, with elevation of 2589 feet. This prospect yielded a small amount of high-gravity oil when tester was used at 8247-8330 feet, then established the water level in recovering 2280 feet of sulphur water with a nominal show of oil and gas when the drill-stem test was made at 8300-58 feet. The company proposes to perforate in Ellenburger saturation and acidize. Then if not productive, this deep test has promise of making an oil producer from the Silurian at 7101-7203 feet.

In the event that this well develops attractive deep production many other operators in the field will undoubtedly try for the deep pay since numerous leases that produce from the regular Permian are nearing the depletion stage.

Reagan County: A new potential record was given the Barnhart field when Amerada Petroleum Corporation's Hickman 1, northwest outpost, flowed 613 barrels in 3 hours, gas-oil ratio 1900/1, through open 2-inch tubing and 2-inch outlet on casing. Production is from perforations in Ellenburger saturation at 8885-8913 and 8922-49 feet, after plugging back from 9264 feet, possibly 10 feet above the water table. These two zones were acidized with a total of 7000 gallons.

Pecos County: Phillips Petroleum Company's Ada Price 1, the deepest well in the district, is drilling at 12,852 feet in chert where progress is extremely slow. No showings have been reported.

Hockley County: Woodley Petroleum Corporation's L. A. Harless, Middle Permian test, is drilling in lime at 5900 feet and on the strength of a slight show in samples from 5879-5892 feet, it is rumored that the operator will set pipe.

Winkler County: A number of deep Ellenburger tests are under way, with Magnolia Petroleum Company's J. B. Walton 21 the deepest, now drilling in chert at 8286 feet.

Amon Carter and Pure Oil Company's Walton 23, north offset to the Keystone field's prolific Ellenburger discovery, is drilling in lime at 5510 feet after having passed up probable production in the Holt lime at 4705-25 feet. Carter and Pure have two other wells in progress, Walton 4 which is drilling at 940 feet, and Walton 5 which is rigging up.

Five tests currently drilling in Winkler County are scheduled for 11,000 feet.

Southwest Texas

Wildcat Work Increases Over Wide Area

The largest flurry of the year in wildcatting is taking place in scattered counties of the Lower Texas Coast and in Southwest Texas areas. The wells are both deep and shallow tests and are not confined to one particular spot. If there is one area that is drawing more attention than any other, it is the Carrizo-Wilcox trend which is paying off in new oil as well as gas-distillate discoveries.

The most active counties presently are Jim Wells, Jim Hogg, Duval, Starr, Hidalgo, Willacy, Bee, Karnes, Goliad, and DeWitt. A comparatively newcomer to the list of prospecting areas is Willacy and Hidalgo. The Texas Company is preparing to drill a projected 12,000-foot wildcat at Yturria Ranch in Willacy County, which will be the deepest test for the area if the objective is reached. It is 1½ miles northwest of the first Yturria dry hole, abandoned at

8515 feet after finding salt water in a majority of the sands.

Jackson County: W. L. Pickens has completed potential on his discovery at East Mauritz. Kramer 1 was perforated at 5703-09 feet in Frio sand and flowed 150 barrels daily through 7/64-inch choke with 760 pounds pressure on tubing and casing sealed. Sand was logged at 5696-5704 feet. The new producer is 6000 feet southeast of Mauritz field and 1 mile southwest of Wharton County line. The operator has staked Huseman 1, on the north 81-acres of a 163-acre tract in Morris & Cummings survey.

Bee County: Transwestern Oil Company and H. B. Zachry have completed the discovery well of the Voss-Foley Wilcox field as a gas-distillate producer. Holzmark 1, 1½ miles southeast of Mineral field, produced 2,000,000 cubic feet of gas with a spray of distillate through ¼-inch choke with 2700 pounds pressure on tubing and 2800 pounds on casing. Perforations were made at 8300-10 feet. Another sand was found at 8530-40 feet, flowing gas and distillate.

DeWitt County: Tide Water Associated Oil Company has opened a new pay on the south side of Nordheim field, ½ mile from production. The Huck 1 was perforated at 8108-24 feet and flowed gas and distillate through ⅛-inch choke with tubing pressure mounting to 1750 pounds and 2300 pounds on casing. Other wells in the field were completed in the 7100-foot sands, all Wilcox.

East Texas

Smith County Well Makes Good Flow from Paluxy

Northern Smith County is assured of a major oil producing area from the Paluxy sand through Skelly Oil Company's Chisum 1, Daniel Minor survey, 6½ miles west by south of Hawkins field, nearest production, having recovered 6000 feet of 24.6-gravity asphalt-base oil when a tester was used at 6972-7007 feet. This second prospect for the Sand Flats structure is 3½ miles south of Wickliffe and Patrick's Hacket-Pure 1, which indicated commercial production on a drill-stem test at 7281-7307 feet, but the hole was junked at 9852 feet in trying to fulfill a 10,000-foot depth contract obligation. Skelly Oil Company's Chisum 1 logged an aggregate of 45 feet of saturated sand in the Paluxy, topped at 6945 feet with an elevation of 432 feet, and was drilling hard sandy-shale at 7106 feet to fulfill a 10,000-foot depth contract.

Quitman Field: Delta Drilling Company's Blalock 1, S. G. Purse survey, flowed 790 barrels of 42-gravity oil on ¼-inch from Paluxy perforations at 6254-6340 feet to become one of the largest producers. The company's Blalock 1-B, same sector of the field, logged a comparatively thin pay zone with Paluxy section at 6295-6340 feet then entered water sand at 6350-90 feet. Pipe was set at 6388 feet to complete through perforations.

Hunt County: Stanolind Oil & Gas Company's Hamilton 1, second producer for the Campbell pool, pumped 224 barrels of 32-gravity oil and 2 barrels of water initial from Paluxy sand at 4340-52 feet. The company's Whitten 1, same area, was coring from top of Paluxy at 4350 feet.

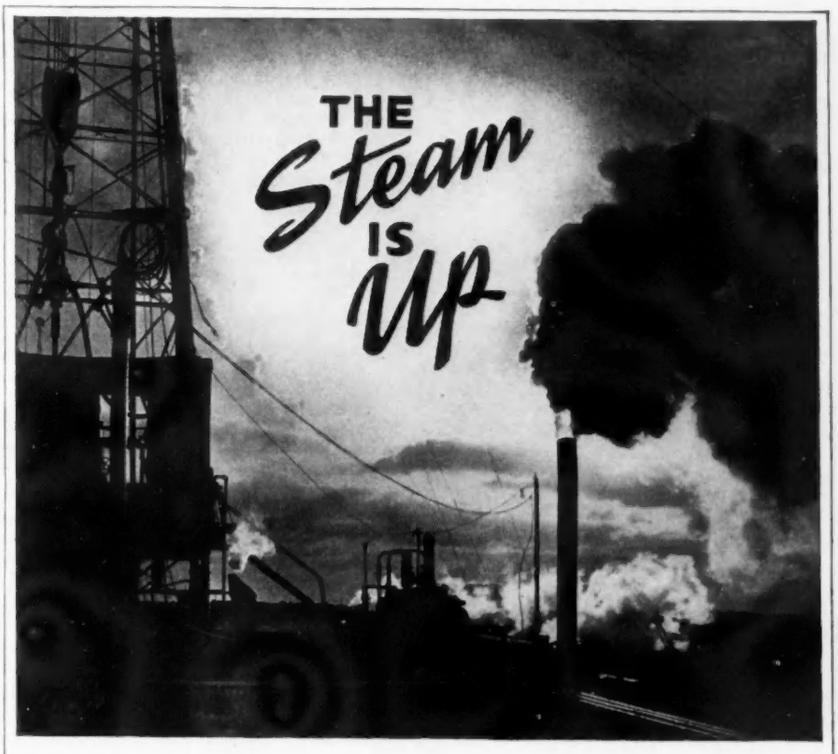
Texas Gulf Coast

Liberty County Discovery Flows 90 Barrels Daily

William Helis' Hirsh 1, T&NO 27, discovery well six miles southeast of Devers in Liberty County, first field to be opened on the coast in several weeks, flowed 90 barrels of 25-gravity oil in 24 hours through 7/64-inch choke from perforations at 7704-10 feet. Total depth is 8205 feet with 7-inch casing set to 8078 feet. Tubing pressure mounted to 660 pounds during the test with casing sealed. The gas-oil ratio was 168-1. A test of perforations at 7774-83 feet showed mainly salt water. Gulf Pipe Line Company is expected to take the production from the new strike. The company has been running analysis of the crude, while at the same time bottom hole pressures were being taken.

Fort Bend County: Providence Oil Company may deviate Hubert-Thorpe 1, in Clodine field, after finding the sand carried all gas. Gas sand was topped at 7472 feet and hole drilled to 7507 feet. It is planned to plug the hole back and deflect the drill pipe in attempt to complete the well as an oil producer.

Chambers County: Salt Dome Oil Company is preparing to deepen an old abandoned wildcat in the South Anahuac area. The company abandoned Ogden 1 at 8149 feet in October, 1938, after failing to establish oil production, but which did produce gas-distillate and water from



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perforations at 7515-25 feet. The well will be deepened to 9500 feet. It is on a 31-acre tract in Evon Douthit survey.

Matagorda County: Sun Oil Company has completed an east extension producer at North Markham. The Braman 7 was perforated at 7702-18 feet and flowed 304 barrels daily through 12/64-inch choke. Total depth is 8100 feet with 5½-inch pipe set on bottom.

Jefferson County: Rowan Drilling Company is preparing to make production tests in Broussard 1, Stephen Eaton Survey, wildcat 4 miles east of Fannette field. The operators cemented pipe around 8600 feet after drilling to 8736 feet.

South Louisiana

Deep Extension at Pecan Island Making Condensate

Humble Oil & Refining Company has completed Louisiana Furs 3, T 16s-1e, a deep extension well in the Pecan Island area of Vermilion Parish. Plugged back from 11,623 feet to 10,296 feet and perforated, the well flowed 43 barrels of condensate daily with gas through 3/16-inch choke, tubing pressure mounting to 3425 pounds. This well is the third drilled by the company on what is believed to be an unusually large distillate prospect.

Calcasieu Parish: E. R. Brann and North American Consolidated are making further tests in Edgewood 2, second well in the Perkins area. The well flowed oil and salt water through perforations at 5378-88 feet, and these holes have been squeezed in an attempt to establish the north offset to oil production. It is reported that unless the well produces oil in the lower portion of the sand, it will be plugged back and tested in a gas sand.

Vinton field has a new operator with Houston Oil Field Materials Company announcing it will drill Vincent 1, 34-10s-12w. The field has been dominated so far by a drilling program conducted by Union Oil Company. The new test is projected to 6000 feet.

Wildcats: There are signs that wildcatting may pick up in the coastal strip. Shell Oil Company has announced it will drill a 11,500-foot wildcat in Lake Verrett, Assumption Parish, State-Lease 346 in Section 30. Company rig will be used. Gulf Refining Company has staked location for a 12 000-foot wildcat on section 28 dome, in Section 21-9s-7e. Location is Iowa-State Martin 1, and will be drilled with a company rig.

Acadia Parish: Continental Oil Company is preparing to make additional tests in Acadia Parish School Board 2, semi-wildcat north of north flank production at Richie. Drill-stem tests at 8540-55 feet failed due to mechanical problems.

In the Egan area, Sun Oil Company is conditioning mud in Trimble 1, 31-9s-1w, northeast of the discovery producer, which tried to blow out from 10,458 feet.

Cameron Parish: Pure Oil Company is drilling deeper around 10,256 feet in State-Snake Lake 1, wildcat in lease 549, Section 25-13s-3w, on Snake Lake prospect. Operators reamed the hole and then set casing before going deeper.

North Louisiana

Well in Old Shongaloo Area Produces

A producer in the abandoned Shongaloo field was reported at Navarro Oil Company's Atkins 1, NW SW 32-23n-9w, Webster Parish, which pumped 36 barrels in 12 hours from Tokio sand perforations at 2976-80 feet with elevation of 304 feet. Oil tested 35.9-gravity.

Ohio Oil Company's deep wildcat, W. T. Gleason 1, 31-22n-92, was drilling red sand and shale below 8175 feet.

Tensas Parish: Further information on the Holly Ridge discovery is expected soon as two wells are nearing the Tuscaloosa discovery zone. Union Producing Company's Jurden 1, NE 19-11n-10e was drilling below 8336 feet, while Carter Oil Company's Shelly 2, SE NE 19-11n-10e, was in sand and shale at 8091 feet. Carter's Shelly 1 is producing from 8444 feet.

Bossier Parish: Shell Oil Company is installing pumping equipment to complete Bolinger 1, SW SW SW 2-23n-12w, east offset to Hunt Oil Company's Nebo 1, discovery in North Cartersville. Initial production test showed 45 barrels of 37-gravity oil and 106 barrels of water. Perforations were from 6090 to 6110 with total depth 6164 feet. Hunt Oil Company completed five wells in the area which has been inactive for several months. Carter Oil Company's Bollinger 1, 20-22n-11w, is drilling below 8541 feet after picking up the Cotton Valley series at 8252 feet. No shows have been reported.

Bienville Parish: Mid-Continent Petroleum Corporation's Jordan 1, SE SW 30-16n-5w, is drilling below 5135 feet on an 8000-foot wildcat test.

Florida

Collier County Wildcat Swabbing Heavy Oil

The first oil field in Florida is in the making with Humble Oil & Refining Company swabbing a wildcat well in the Suniland area of Collier County. The test is Gulf Coast Realties 1.

Operators have been swabbing the well, the recovery being 450 barrels of fluid with 212 barrels being low-gravity oil, the remainder water. The fluid is coming from open hole at 11,613-26 feet. Total depth is 11,626 feet with 7-inch casing set to 11,599 feet. The production is reported to be coming from a lime formation.

As a result of shows in the well, although deep, there has been a flurry of leasing in Collier and surrounding counties. The well is about halfway down the peninsula, and is several hundred miles from the lease play now under way in Northern Florida, South Georgia and Alabama.

The Florida State Land Division announced October 22 that James V. Allred, former Texas governor, had offered $109,185 for oil, gas and sulphur leases on 1,091,855 acres of state-owned lands in the Everglades. The land is situated in Dade, Collier, Monroe, Broward, Palm Beach, Hendry, and Lee Counties. Allred asked for a 10-year lease, 10-cent bonus with 10-cent annual rentals.

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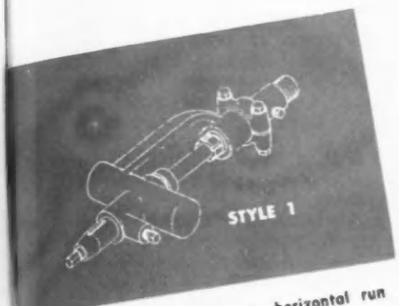

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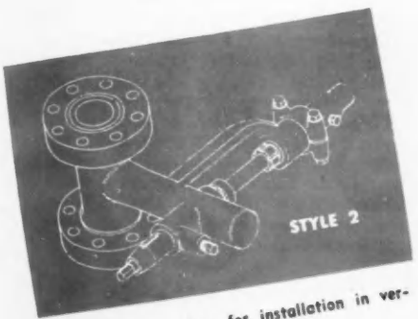
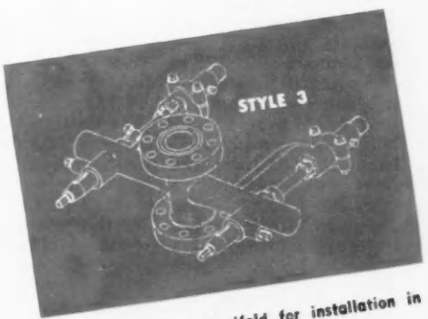
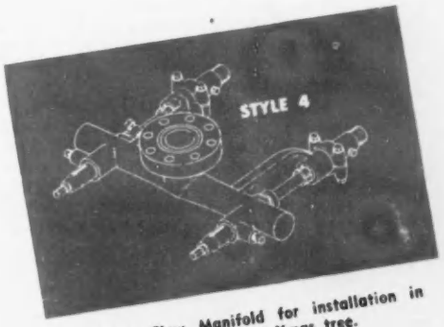


Tee Type Flow Wing for installation in vertical run of Xmas tree.



Cross Type Flow Manifold for installation in vertical run of Xmas tree.



Tee Type Flow Manifold for installation in horizontal run of Xmas tree.

Rocky Mountain Area

Gebo Dome, Wyoming, Well Indicates Heavy Flow

Performance on drill stem of Continental Oil Company's Unit 1, SW NW SE 23-44n-95w, Gebo Dome, Hot Springs County, Wyoming, indicates upwards of 5000 barrels daily flowing from the Embar lime. A total of 107 feet of saturated Embar was cored. Drilling stopped for drill-stem test at 5738-84 feet, which showed 7 stands of oil in 15 minutes, and at 4784-4845 feet, open 15 minutes, showed 15 stands of oil. It entered shale break at 4845 feet and is coring in shale at around 4910 feet headed for untested Tensleep sand. Oil from the Embar tested around 30 API and is comparatively sulphur free.

The Gebo structure, a broad faulted anticline with 800 feet of closure, is 12 miles north of Thermoplis, Wyoming, where Empire State Oil Company operates a skimming-asphalt refinery with 1000 barrels capacity. Continental Oil Company holds leases embracing 5500 acres covering the Gebo structure, of which 3600 acres comprise the unit area.

Rangely Field: Presaging development of the deep Pennsylvanian zone in the Rangely field, Rio Blanco County, northwestern Colorado, The California Company has opened up its Raven 1, C NW SE 30-2n-102w, deep discovery made 10 years ago and the only well drilled at Rangely to the Pennsylvanian. The well made 227 barrels daily flowing through 34/64-inch choke on tubing with pressure of 120 to 150 pounds on tubing and 1000 pounds on casing. It originally was completed in 1933 for an initial of 200 barrels daily from 668 feet of alternating strata of saturation in Weber quartzite from 5657 feet to plugged depth of 6335 feet. Total depth was 7173 feet. The well is now being produced and oil trucked to Salt Lake City refineries. Gravity is 33 API. Stanolind Oil & Gas Company, Kerlyn Oil Company, and George Cameron have recently acquired some leases on the structure, while The California Company controls the majority of the acreage. Rangely is one of Colorado's largest structures apparent from the surface, a broad anticlinal dome approximately 12 miles long and 8 miles wide. It is expected that an intensive deep drilling program to develop the Weber quartzite zone (Pennsylvanian) will soon be under way. For a number of years the field has produced high-gravity oil from the shallow fractured Mancos shale zone. The deep well had been shut in since completion.

Brady Discovery: The Texas Company's Schlepp 1, SEc 21-27n-2w, Brady area, Pondera County, Montana, pumped 25 barrels initial from saturation in the Sunburst at 1470-82 feet after a 30-quart shot. Hole was plugged back after encountering water in Madison at 1719-25 feet. The wildcat is 8 miles southwest of the discovery well in the Midway pool. While Montana is urgently in need of light oil, importance of the shallow discovery, which apparently indicates a shoreline pool, can not be determined until further drilling.

Midway Extended: Located 1½ miles east of R. C. Tarrant's De Staffany 1, which a year ago made a small discovery in the Midway area, Pondera County, Montana, pumping 5 barrels in 8 hours, Hageman & Pond's Rispin 1, SE SE NW 20-28n-1e, pumped 74 barrels initial, and settled to 24 barrels daily on 10-day pumping test. It had Sunburst sand at 1736-65 feet and encountered saturation from 1750-65 feet, latter total depth. Gravity of the oil is 44 API. Importance is attached to the extension as it indicates the trend of the Midway pool east following failures in other directions. Three wells in the area have started drilling as a result of the extension.

Steamboat Extended: Steamboat Butte field, on the northwest end of Pilot Butte uplift, Fremont County, Wyoming, was extended a quarter mile south by British American Oil Producing Company's Tribal 2-E, NE SW NW 5-3n-1w, which pumped 200 barrels initial from Sundance sand topped at 5119 feet, with hole bottomed in sand at 5172 feet.

Test Near Greeley: Ohio Oil Company is moving in rotary for Nordloch 1, CSE SE 20-5n-63w, for a projected 8000-foot test through the Dakota series and possibly deeper, on a block of acreage 12 miles southeast of Greeley in Weld County, Colorado. The company has leased extensively in the area and is reported to have acquired leases embracing 50,000 acres which covers five seismograph highs.

California

Fresno County Strike May Extend Two Fields

Confirming a new discovery for the area between Helm and Riverdale fields, Fresno County, General Petroleum Corporation's Noble F-4-5, SW SW SW 5-17-18, made an initial flow of 150 barrels daily of light oil and between 3,000,000 and 4,000,000 cubic feet of wet gas. The new find is yet to be classified because opinion is divided as to whether it is a separate pool, an extension of Riverdale or of Helm field.

Butte County: Richfield Oil Corporation's Chico 1, 17-21-1, Chico area gas test, found showings which will justify further drilling. The hole is bottomed at 6500 feet.

Fresno County: An extension of the recently discovered Raisin City area Eocene field is promised by Seaboard Oil Corporation's STU 14, 14-15-17, a quarter mile from the same company's discovery well. Bottomed at 6409 feet, the well had good showings just below 6300 feet, and will make production test.

Kern County: Failure of two outposts indicates the new Round Mountain area pool, discovered last month by Bandini Petroleum Corporation's Signal-Mills 1, is of restricted area. One of the outposts was located to the northwest and the other to the southeast of the discovery well, both within a half-mile radius; and neither found commercial production.

Ventura County: Shallow production of undetermined importance has been opened up in the Ojai area by Richfield Oil Corporation's wildcat Ojai 48, 12-4-22. Early reports from production test indicate about 50 barrels daily of heavy oil. Bottom is at 1055 feet.

Standard Oil Company's Piru area wildcat, Crestmont 1, 14-14-18, probably will open a new pool. The hole after being bottomed at 7375 feet was plugged back to 6340 feet; and production tests from two intervals aggregating more than 200 feet are to be made. The same company's other wildcat in this county, Fillmore Comm. 2-1, 24-4-20, is coring at 9526 feet. While formation is not being reported, scouts credit the well with showings.

Sacramento County: Amerada Petroleum Corporation's Thornton area gas discovery received further confirmation last week with completion of that company's outpost, Goodfellow 1, 25-5-5. On initial test the well made 7,000,000 cubic feet through a 5/8-inch choke with pressures of 805/1214 pounds.

Michigan

Seven in a Row Make Goodwell Good Pool

Completion of the seventh Traverse-lime producer in the Goodwell pool, Newaygo County, without a failure has established the area as the best discovered in Michigan this year. It is the first new field in two years where as many producers have been drilled without finding one or more dry holes.

Clare County: Pure Oil Company has abandoned Bulman A1, E½ NE SE 30-20n-6w, Winterfield pool, having failed to establish commercial production in the Richfield at 5090 feet. It was the third deep test failure for the field and a north offset to the lone discovery deep well. The discovery, which produced from 150 to 200 barrels per day initially from Richfield, was viewed as the most important 1942 development in the state.

Deep Tests: Depth records have been set for two different districts of Michigan during the week. Ohio Oil Company's Chamberlain 1, 14-31n-8w, Antrim County, reached 5350 feet with Trenton lime expected within 300 feet or less. In southern Michigan, Colvin and Voorhees' Glaser 1, 14-3n-1e, Ingham County, logged Trenton at 5752 feet and set a record for the area at a drilling depth of 5600 feet. This test due to go to 6700-7000 feet.

Supreme Court: Michigan Supreme Court has affirmed a lower court decree setting aside the state's claim to title on an 80-acre lease in the Reed City field, Osceola County, which has produced 423,000 barrels of oil. The state took title to property in 1938 under the delinquent tax statutes but the transfer was held in error by both courts due to an error in publication notice for the 1938 tax sale. The property was described as the east ½ of the northeast ½ and should have been the east ½ of the northeast ¼ (of Section 29).

Gordon Oil Company drilled the property on a lease obtained from the state in 1940, completing three producers. After the lower court held against the state title in 1942 Gordon negotiated a compromise agreement with Welsh Oil Company on the seven-eights working interest, Welsh having previously obtained a lease from the owners of the land.

CHARLES A. MILLER, southern division personnel manager for The Texas Company, Houston, and in charge of safety work of the company throughout the United States, was elected president of the Veterans of Safety, at their annual banquet at Chicago last week during the National Safety Congress. The organization is an honorary society of safety engineers throughout the United States and Canada, who have 15 or more years experience in safety engineering work.

United States Well Completions

ARKANSAS

Columbia—Smart Field: G. H. Vaughn's Green 3, nw sw se 11-15s-20w, pumper in Tokio, 2495 ft.

Nevada County: McAlester Fuel Oil Co.'s Williams B-2, 2-15s-20w, pumper in Tokio.

Union County—New London: Stewart Oil Co.'s Mark King 1, c ne ne 18-18s-11w, td 5750 ft.

Louann: R. A. Stacey et al's Bratton 1, 22-15s-17w, abnd, 5380.

CALIFORNIA

Fresno County—Coalinga, East: Standard's 35-31B, nw nw sw 31-19-16, flow 596 bbls 27.1-gr, 391 ft perf 8169 ft, td 8169 ft.

Fresno County—Coalinga: Guijarral Service Co.'s PVF-S 7, se se nw 6-20-15, pump 30 bbls oil, 20 water, 100 ft perf 1331 ft, td 1331 ft.

Standard's 27-25A, ne sw sw 25-19-15, pump 37 bbls, 40 ft perf 3930 ft, td 3935 ft.

Standard's 33-11C nw ne ne 11-20-15, pump 53 bbls, 108 ft perf 3832 ft, td 4030 ft.

Standard's 4-5E, nw sw nw 5-21-15, pump 10 bbls oil, 6 water, 98 ft perf 2918 ft, td 3261 ft, pb 2923 ft.

Texas Co.'s C-2, nw sw nw 30-20-15, pump 98 bbls, 62 ft perf 1942 ft, td 1943 ft.

Kern County—Belridge, South: Belridge Oil Co.'s 66-34, se nw se 34-28-21, pump 35 bbls, 54 ft perf 1100 ft, td 1100 ft.

Belridge Oil Co.'s 78-34, sw se se 34-28-21, pump 40 bbls, perf 583-847, 891-950 ft, ldd 950 ft, td 950 ft.

Belridge Oil Co.'s 87A-34, ne se se 34-28-21, pump 100 bbls 14.3-gr oil, 14 water, 416 ft perf 1050 ft, td 1050 ft.

Belridge Oil Co.'s 88-34, se se se 34-28-21, pump 65 bbls 16.5-gr oil, 14 water, 163 ft perf 1037 ft, td 1029 ft.

Belridge Oil Co.'s 88A-34, se se se 34-28-21, pump 45 bbls 14.4-gr oil, 22 water, 354 ft perf 1000 ft, td 1000 ft.

Berry Oil Co.'s 98, sw ne se 30-28-21, pump 27 bbls 19-gr oil, 3 water, perf 641-701 ft, ldd 721 ft, td 721 ft.

Chanslor Canfield Midway Oil Co.'s B. F. 11-12, se nw sw 11-29-21, pump 17 bbls 14-gr oil, 5 water, perf 1195-1185, 1175-1165 ft, td 1410 ft, pb 1210 ft.

General Petroleum Corp.'s 26-2, se ne nw 2-29-21, pump 56 bbls 13.7-gr, perf 564-660, 740-70, 810-955 ft, td 1000 ft.

Shell's FKL 8-1, se se sw 1-29-21, pump 44 bbls oil, 44 sand, perf 1031-985, 964-886 ft, td 1040 ft.

Kern County — Midway-Sunset: Standard's 107-19D, ne sw se 19-32-24, flow 115 bbls 20-gr ½-in, perf 2696 ft, td 2700 ft.

Westates Petroleum Co.'s St. Lawrence 14, se¼ 5-32-23, abnd 3287 ft.

Kern County—Round Mountain: Crestmont Oil Co.'s Coffee 5, nw sw ne 8-28-29, pump no est, perf 1345-65, 1385-95, 1428-35 ft, td 1501 ft.

Los Angeles County — Newhall-Potrero: Barnsdall's R.S.F. 40, 7730 ft s 10,787 ft e cor "J" 36-4-17, gas lift 84 bbls 33-gr oil, 10 water, 163,000 gas, 48/64-in, 323 ft perf 7007 ft, td 7118 ft.

Los Angeles County—Wilmington: Continental's L.A.C.F.C.D. 30, 625 ft s, 47 ft e sec Anaheim and Pico Sts, pump 24 bbls oil, 96 wtr, 188 ft perf 3511 ft, td 3623 ft, pb 3513 ft.

Orange County—Huntington Beach: Huntington State Co.'s State 3, 80 ft nly 55 ft wly of c/l Nineteenth and Ocean Avs, pump 145 bbls 17.3-gr, 100 ft perf 2865 ft, td 2865 ft.

Ventura County—Piru Area: Pacific Western's Temescal 14, 1620 ft s, 2035 w intersec w bdry Temescal Ranch & nl T 4n-R-18w, pump 150 bbls 16-gr oil, 290 water, td 10,313 ft, pb 3350 ft.

Ventura County — Ventura Avenue: Shell's Taylor 164, 825 ft n and 3610 ft w c/l No. 11, flow 503 bbls oil, 310,000 gas, perf 10,-545-9984, 9942-9901, 9862-9540 ft, td 10,550 ft.

CALIFORNIA WILDCATS

Fresno County—Discovery: General Petroleum Corp.'s F-4-5, sw sw sw 5-17-18, Helm area, flow shut-in awaiting flow lines, 2625/200 lbs perf 8005-8025, 7985-8005, td 8092 ft.

Kern County—Failure: Signal Oil & Gas Co.'s 22-4 ne se se 22-27-28, Mount Poso area, Vedder, barren, topped 1435 ft, abnd 1450 ft.

Los Angeles County—Failure: P. M. Girard's Fisher-Wosk 1, ne se ne 6-13-16, Newhall area, Newhall-Potrero zone, equivalents barren, abnd 7851 ft.

COLORADO WILDCAT

Routt County—Failure: Stanolind's Milliken 2, ne se sw 32-4n-89w, Beaver Creek, Sundance 4216 ft, abnd 4454 ft.

ILLINOIS

Clay County: J. J. Lynn's College 1, nw nw ne 31-3n-6e, abnd 2976 ft.

Shell's L. Moss 2, ne nw sw 14-5n-5e, 231 bbls, Weiler 2133-36 ft, Ben 2291-96 ft, AV 2341-48 ft, td 2356 ft.

Texas' C. T. Wade 2, se nw se 14-5n-5e, abnd 2589 ft.

Texas' H. Byers 1, sw sw ne 22-5n-5e, 90 bbls, AV 2347-53 ft, 2353 ft.

Texas' H. Byers 2, nw ne se 22-5n-5e, 210 bbls, AV 2344-54 ft.

Texas' E. Brooks 1, ne nw se 30-5n-7e, abnd 2946 ft.

Edwards County: Skelly's Glover 1, sw sw sw 12-3s-10e, 155 bbls, Biehl 1964-73 ft, 1973 ft.

Texas Co.'s Gillespie-Shelby Comm. 1, ne ne se 9-1n-10e, 614 bbls, McCl 3275-81 ft, 3281 ft.

Franklin County: E. S. Adkins' Orient Coal Co.'s 12-B, se se nw 13-7s-2e, abnd 2885 ft.

E. S. Adkins' J. T. Boner "S" 3, se ne se 25-7s-2e, abnd 2185 ft.

Gallatin County: Cherry & Kidd's M. Kerwin 14, se se se 10-8s-10e, 25 bbls, Walt 1977-84 ft, td 1987 ft.

Hamilton County: Smokey Oil Co.'s R. Johnson 1 (WO), ne ne ne 26-6s-5e, 25 bbls, L O'H 3185-96 ft, td 3282 ft.

Texas Co.'s Tedford 2, nw se sw 22-6s-6e, 46 bbls, AV 3110-15 ft, td 3122 ft.

Texas Co.'s Shanitz 5, se se ne 27-6s-6e, 11 bbls, AV 3084-3104 ft, td 3104 ft.

Pure's Guy St. Clair A3, sw nw sw 18-6s-7e, 22 bbls, TS 2435-73 ft, td 2474 ft.

Jefferson County: Texas Co.'s J. D. Smith 1, sw se se 21-3s-3e, abnd 2993 ft.

Madison County: Oberling & Bryant's Schnoeck 2, sw nw ne 27-en-6w, 92 bbls, Trenton 2339-43 ft, td 2355 ft.

Marion County: Texas Co.'s F. Parker 15, ne ne ne 33-2n-2e, 89 bbls, Ben 1846-56 ft, td 1856 ft.

Gulf's Geo. F. Hinderer, se ne nw 25-1n-3e, abnd 2869 ft.

Montgomery County: W. R. Holmes' Ida Klekamp 2, nw sw se 29-8n-5w, abnd 630 ft.

Richland County: James L. Black's Ella Markham 1, 150 ft se c nw ne 31-2n-14w, abnd 3153 ft.

Wabash County: Texas Co.'s W. Geiger 2, sw se se 8-1s-12w, 51 bbls, Weiler 1998-2005 ft, td 2401 ft.

Texas Co.'s W. Geiger 3, ne sw se 8-1s-12w, 48 bbls, Weiler 2010-22 ft, td 2022 ft.

Texas Co.'s Kuhn 2, nw nw sw 8-1s-12w, 96 bbls, Weiler 2063-70 ft, td 2070 ft.

Superior's E. & C. Crowe Unit 4, ne sw nw 9-1s-12w, 22 bbls, Biehl 1491-1520 ft, comp.

C. R. Ross' A. Akin 1, sw sw nw 7-3s-13w, 140 bbls, Cyp 2477-87 ft, td 2938 ft.

H. A. Stiles' Trimble 3, se ne ne 2-1n-12w, abnd 2020 ft.

Wayne County: (Old Well Deepened) Oilwell Drlg. Co.'s W. S. Lawrence 2, c s½ sw se 34-1s-7e, 30 BOPD McCl & Aux V, 3112-30 ft, otd 3267 ft, td 3310 ft.

Oilwell Drlg. Co.'s McPherson 2 (DD) n½ nw nw 3-2s-7e, 24 bbls, Rosi & McCl 3160-90 ft, 3290-94 ft, otd 3253 ft, td 3304 ft.

Cities Service's Perry 1, c w½ sw sw 28-2s-ne, 174 bbls, L O'H 3252-56 ft & Rose 3280-90 ft, td 3378 ft.

Texas Co.'s W. M. Goudy 3, sw ne 16-3s-7e, 320 bbls, AV 3197-3206 ft & L O'H 3290-92 ft, td 3375 ft.

Texas Co.'s M. E. Heaton 5, nw se 17-3s-7e, 75 bbls, AV 3197-3211 ft & Rose 3314-23 ft, td 3378 ft.

Shell's G. W. Wilson 4 (WO-PB), e½ se se 33-1n-6e, 52 bbls, AV 3010-19 ft, td 3222 ft, pb 3044 ft.

Pure's E. J. Feller 4, nw se ne 6-1n-8e, 36 bbls, AV 3939-41 ft, td 3154 ft.

Pure's Ed Brinker "A" 2, sw ne 14-1n-8e, 219 bbls, McCl 3092-95 ft, 3098-3105, 3118-20 ft, td 3208 ft.

Pure's Van Fosen Cons 1, nw sw 14-1n-8e, 16 bbls, McCl 3143-47 ft, td 3155 ft.

White County: Phillips' Laura 3, sw se sw 19-4s-11e, 65 bbls, Clark 1367-75 ft, td 1376 ft.

ILLINOIS WILDCATS

Effingham County—Discovery: C. E. Stout et al's W. F. Bushue 1, sw nw 16-6n-6e, 245 bbls, McCl 2564-68, 70-72 ft, td 2653 ft.

Jefferson County—Failure: Gulf's Sloat 1, nw ne nw 31-1s-2e, abnd 2381 ft.

Jefferson County—Failure: K. M. Bayer's Kiefer 1, se se nw 20-4s-4e, abnd 3303 ft.

Montgomery County—Failure: Central Pipe Line Co.'s Frank Fees 1, nw ne sw 35-11n-5w, abnd 2467 ft.

Perry County—Failure: Big Chief Drlg.'s Know Gee 1, se sw sw 26-4s-1w, abnd 1674 ft.

Saline County—Discovery: J. H. Gilliam's Sisk 1, se ne nw 15-10s-6e, 590 MCFG Walts 1491-99 ft, td 2440 ft.

White County—Failure: N. V. Duncan et al's McCarty 1, ne ne 1-6s-9e, abnd 3241 ft.

INDIANA

Daviess County: R. D. Brown, Inc.'s Kelley Heirs 2, c s½ nw se 16-2n-6w, abnd 895 ft.

Henry County—Knightstown Gas Co.'s Sam

Wells Completed in United States in Week Ended October 23, 1943

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama													2	3
Arizona													4	2
Arkansas	2			1	3						3		162	185
California	22			1	23		1		2	3	26	32	1,232	642
Colorado									1	1	1		22	14
Florida													1	
Georgia													1	2
Illinois	26			10	36	1	1	1	5	7	44	40	1,471	1,775
Indiana	1	1		1	3				3	3	6	7	224	323
Kansas	11	2		9	22				7	7	29	46	1,397	1,352
Kentucky	4			3	7				5	5	12	13	327	127
Louisiana	3	1		3	7						7	10	465	786
North Louisiana	1				1						1		187	
South Louisiana	2	1		3	6						6	10	278	
Michigan	1			5	6				5	5	11	14	484	573
Mississippi									1	1	1		35	91
Missouri													21	33
Montana	6	2		4	12		1		3	4	16		186	174
Nebraska														28
New Mexico	8				8	1					9	6	223	331
New York	18		11		29						29	25	966	1,012
Ohio	5	1		9	15						15	13	675	913
Oklahoma	5	2	5	4	16	3	1		9	10	29	31	1,157	1,188
Pennsylvania	34	4	16	3	57						57	53	2,257	3,341
Tennessee													6	8
Texas	49	1		18	68	2	1		11	12	82	96	3,416	4,541
E. T. Bor. Co.'s													16	
E. Texas Field													5	
Rest of E. Texas	4			1	5				2	2	7	7	192	
North Texas	10			9	19	1	1		3	4	24	17	842	
W. Central Tex.	4				4	1			2	2	7	8	311	
West Texas	15				15				2	2	17	27	760	
Tex. Panhandle	3				3						3	3	159	
G. Coast, Upper	2			5	7						7	6	261	
G. Coast, Lower	6	1		2	9						9	20	515	
Southwest Texas	4			1	5				1	1	6	8	308	
S. Central Texas	1				1				1	1	2		47	
West Virginia	2	14		3	19						19	25	554	610
Wyoming	6				6				2	2	8		113	86
Total U.S.	203	28	32	74	337	7	5	1	54	60	404	411	15,401	18,140

* Includes distillate wells. † Includes salt water disposal wells.

Mason 3, ne nw se 31-16n-10e, 10 MCFG Trenton 891-903 ft, td 903 ft.

Posey County: Cherry & Kidd's E. H. Leonard 1, ne sw nw 21-8s-14w, 150 bbls, McCl, 3618-32 ft, td 2729 ft.

INDIANA WILDCATS

Dubois County—Failure: Hayden & Michal's W. T. Himsel 1, sw se sw 27-1n-6w, abnd 1010 ft.

Gibson County—Failure: Ohio Oil Co.'s P. F. Lucas 1, nw ne ne 19-2s-11w, abnd 2361 ft.

Sullivan County—Failure: Ohio Oil Co.'s Shirley Realty Co. 2, se sw se 15-9n-9w, abnd 2407 ft.

KANSAS

Barber County—Sun City: Great Lakes Carbon's Freeman "B" 1, nw nw sw 26-30s-15w, Lans 3908 ft, pay 4355-63 ft, 2000 gals acid, flow 22 bbls oil per hr, BHB test 8176 bbls oil, 4363 ft.

Barber County — Medicine Lodge: Barbara Oil's Angell-Ohio, c nw 30-33s-13w, Viola 5015 ft, 2,000,000 gas, 5023 ft.

Barton County—Kraft Prusa: Black-Marshall Oil's Redetzke 2, c se se 19-16s-11w, Conglomerate 3335-60 ft, abnd 3376 ft.

Barton County — Ainsworth: Phil-Han & Texon Oil's Allen 1, nw se nw 24-16s-13w, Arb 3441 ft, abnd 3445 ft.

Barton County—Marchand: J. H. Hershey's Johnson 1, c sw nw 23-20s-12w, Arb 3373 ft, no show, abnd 3405 ft.

Ellis County—Bemis: Anderson Pritchard's Samuelson 2, nw ne nw 36-11s-17w, Conglomerate 3667 ft, no shows, abnd 3684 ft.

Ellsworth County—Stoltenberg: C. E. Ash's Stratman, c n½ nw sw 1-17s-10w, lcn, abnd.

Leavenworth County — Linwood: Roxan Oil's Reiter Estate 1, c e½ nw ne 29-11s-22e, top sand 795 ft, 250,000 gas, 805 ft.

Phillips County—Ray: Cities Service's Behige "B" 1, sw sw nw 28-5s-20w, Penn sandy lime 3608 ft, fill 2700 ft oil in 6½ hrs, 1903 bbls oil plus 6% wtr, 3675 ft.

Pratt County—North Stark: Lion O & K's Ford, ne sw se 12-26s-12w, Viola Dol 4157 ft, 500 gals acid, swab 55 bbls oil in 6 hrs plus 1% wtr, 4158 ft.

Pratt County—Frisbie: Stanolind's Frisbie 2, c ne sw 5-26s-13w, Lans 3755 ft, 5000 gals acid, pump 60 bbls fluid plus 11% wtr, net oil 534 bbls, td 4035 ft, pb 3948 ft.

Pratt County—Cunningham: Ohio's Fitz Simmons 1, c s½ nw sw 35-27s-11w, Lans 3480 ft, pay 3512-24 ft, 3000 gals acid, flow 35 bbls oil in 4 hrs, 3524 ft.

Rice County—Doran: C. H. Weaver's Katterjohn 2, c e½ nw sw 13-19s-10w, Conglomerate 3294 ft, no shows, abnd 3310 ft.

Rice County—Welch: Branline & Hall's Freeman 1, ne ne se 4-21s-6w, Miss Chat 3437 ft, no shows, abnd 3450 ft.

Rooks County—Stockton: Coop & T. H. Allen's W. C. Kelley 1, c nw nw 35-17w-7s, Lans 3045 ft, pb 3106 ft, 3000 gals acid, pump 83 bbls oil, 3114 ft.

Rooks County: Kriley: Continental's F. J. Kriley A1, nw se sw 15-8s-18s, Arb 3391 ft, pn 3398 ft, 1000 gals acid, swab ¼ bbls oil 2½ bbls wtr per hr, abnd 3424 ft.

Russell County—Gurney: Texas Co.'s E. P. Gurney 4, c w½ se ne 23-14s-14w, 5000 gals acid, pump 126 bbls, 3147 ft.

Russell County—Atherton: Cities Service's Miller "F" 1, sw sw ne 32-13w-14w, Arb 3304-07 ft, 1000 gals acid, pump 69 bbls oil plus 3% wtr, 3307 ft.

Russell County—Williamson: Gulf's Newcomer 2, c nw sw 10-14s-14w, K C 3092 ft, 4000 gals acid, pump 13 bbls oil 53 bbls wtr, 3278½ ft.

Russell County—Trapp: Benson Drlg.'s Ely 1, sw sw ne 15-15s-13w, Arb 3322 ft, pn 3087 ft, 1000 gals acid, bail ¾ bbls oil 4½ bbls wtr per hr, abnd 3357 ft.

Stafford County—Drach: Phillips' Hitz 4, c ne nw 7-22s-12w, Arb 3655-57 ft, 2000 gals acid, pump 74 bbls oil in 4 hors, 3662 ft.

Stafford County — Zenith: Transwestern's Nickle 4, c e½ ne nw 1-24s-11w, Viola 3704-08 ft, pay 3729-33 ft, flow 266 bbls oil 5% wtr, 3734 ft.

KANSAS WILDCATS

Brown County—Failure: Gall & Towle's Dillaplain 1, c sw ne 5-4s-15e, Base KC 1578 ft, Miss 2561 ft, Hunton 2994 ft, abnd 3045 ft.

Ellis County—Failure: Carl Lebsack & H. E. Alexander's Dumner 1, c w½ nw nw 33-12s-18w, lcn, abnd.

Leavenworth County—Failure: Workman's Hoffine 1, c ne se 11-12s-22e, lcn, abnd.

Pratt County—Failure: Pryor & Lockhart and Aladdin's Barnes Est. 1, ne c 25-27s-14w, Viola 4354 ft, Base KC 4916 ft, Miss 4305 ft, Kinderhook 4330 ft, Simp 4442 ft, Arb 4542 ft, abnd 4582 ft.

Rooks County—Failure: Nelson et al's Griffin 1, c ne ne 25-8s-16w, Congl 3600 ft, Arb 3622 ft, abnd 3710 ft.

Russell County—Failure: Ingling & Parker's Marshall 1, c ne nw 20-13s-11w, B. Lans 2901 ft, W. Lans 2916 ft, Viola 3321 ft, Simp 3360 ft, Arb 3417 ft, abnd 3447 ft.

Stafford County—Failure: Marlyn Oil's Sittner 1, swc nw 4-22s-12w, Arb 3673 ft, abnd 3685 ft.

KENTUCKY

Daviess County: W. E. Hupp et al's Chas. Stevens 2, 13-N-29, abnd 1366 ft.

Henderson County: Sinclair Prairie's Bradley 3(WO), 3-N-23, Walt 1938-47 ft, TD 8d 1950-68 ft, 100 bbls, 1969 ft.

Sinclair Prairie's Bradley 4, 3-N-23, Walt 1819-27 ft, 115 bbls, 2474 ft.

Oil Carriers, Inc.'s Jewell 1, 8-N-23, abnd 2792 ft.

Cherry & Kidd's Cooper 1, 5-P-21, abnd 2736 ft.

Cherry & Kidd's Burbank 21, 24-Q-21, McCl 2700-04 ft, 200 bbls, 2725 ft.

Union County: Carter Oil Co.'s L. Russellberg 3, 4-O-21, McCl 2564-73 ft, 158 bbls, 2574 ft.

KENTUCKY WILDCATS

Allatin County — Failure: Gulf's Carnegie Tech 1, ne sw nw 18-V-7-4, abnd 924 ft.

Carroll County — Failure: Gulf's Riddle 1, sw nw sw 12-T-7-4, abnd 964 ft.

Henderson County — Failures: Sohio Prod. Co.'s O. Royster (95) "B" 1, 25-O-24, abnd 2744 ft.

Snowden McSweany's A. Alexander 1, 20-Q-20, abnd 2796 ft.

McLean County—Failure: Kingwood's Barrett 1, 24-L-27, abnd 2552 ft.

NORTH LOUISIANA

LaSalle Parish—Little Creek: V. V. Ryan's Miles 1, 1980 s, 660 e of nwc 25-9n-1e, flow 99 bbls.

SOUTH LOUISIANA

Acadia Parish—Jennings: Shell's Conover-Community 21, start nw cor sec 40, go sw alg w'ly line 1316 ft, th se at ra 2378 ft in sec 40-9s-2w, abnd 8268 ft.

Iberia Parish—Lake Fausse Point: Texas Co.'s State 14, 626 ft n 2064 ft e of sw cor sec 26-11s-8e, 7-in 8745 ft, perf 8800-43 ft, flow 245 bbls, 9/64-in, td 9000 ft.

LaFayette Parish—Anse la Butte: Stanolind's Melancon-Dupuis 1, n flank, 1045 ft sw alg sel sec 48 fr e cor, th nw at ra 619 ft in sec 43-9s-5e, 7-in 8775 ft, perf 9638-43 ft, abnd 10,418 ft.

La Fourche Parish — Raceland: Amerada's South Coast Corp. 13, start ne cor sec 36, go s 24 deg 6 mins e 1104 ft, th s 81 deg 22 mins w 748 ft, th s 8 deg 22 mins e 1846 ft in sec 36-16s-19e, abnd 10,020 ft.

St. James Parish—Hester: Humble's Canal Bank & Trust 1-B, start nw cor fractional sec 7, go se'ly on swl sec 7 3079 ft, th ne'ly at ra 17 ft sec 7-11s-5e, 7-in 10,656 ft, perf 9730-40 ft, flow 37 bbls condensate, 2,272,000 gas, 3/16-in, td 10,774 ft.

Terrebonne Parish—Gibson: Shell's Realty Operators 15-B, start ne cor sec 17, go s 33 deg 7 mins w alg el sec for 3312 ft, th n 56 deg 53 mins w at ra 594 ft in sec 17-17s-15e, 5½-in 9535 ft, perf 9202-08 ft, flow 325 bbls, 9/64-in, td 9540 ft.

The OIL WEEKLY'S TRADING POST

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Trading Post Section, THE OIL WEEKLY
P. O. Box 2608 Houston 1, Texas

MICHIGAN

Allegan County—Heath: James S. Brailey's Klein 1, ne sw se 4-3n-14w, dry, td 1528 ft.

Clare County—Winterfield: Pure's Bulman A-1, e½ ne se 30-20n-6w, dry, td 5081 ft.

Mecosta County—Fork: Mogul Oil Co.'s Murray 1, s½ sw sw, 4-16n-7w, dry, td 3861 ft.

Newaygo County—Goodwell: Pure's Harris 2, e½ nw se 8-14n-11w, Traverse, flow 310 bbls 8 hrs, td 2784 ft.

Osceola County—Rose Lake: Smith Petroleum Co.'s Smith 1, s½ nw se 31-19n-9w, Traverse, dry, td 3192 ft.

Van Buren County: New Geneva: Socony Vacuum's Taylor 1, ne se nw 24-1s-16w, Traverse, dry, td 1100 ft.

MICHIGAN WILDCATS

Clare County—Failure: Pure's P.M.R.R. 1, s½ se nw 11-20n-5w, td 1470 ft.

Ottawa County—Failure: Southwest Dev. Co.'s Effers 1, se se se 4-5n-15w, Traverse, td 1583 ft.

Saginaw County—Failure: C. W. Teater's Byrne 1, s½ nw ne 11-9n-4e, Dundee 2700 ft, td 2975 ft.

Shiawassee County—Failure: Monroe Mark's Litchfield 1, sw ne nw 4-8n-1e, td 3002 ft.

Wexford County—Failure: Midwest Refineries' Kellogg 1, n½ nw nw 34-21n-11w, td 1440 ft.

MISSISSIPPI WILDCAT

Lawrence County—Failure: William Helis et al's Dinkins 1, 525 s nwc 28-5n-11e, abnd.

MONTANA

Carbon County — Elk Basin: Ohio's Elk-OPC-9 11, ne ne sw 35-9s-23e, flow 3000 bbls, Tensleep 4286 ft, 6⅝-in 4476 ft, td 4516 ft.

Glacier County—Cut Bank: R. C. Jeffries' Exchange 1, sw nw nw 3-34n-6w, swab 35 bbls, Lower Cut Bank 2963-73 ft, 7-in 2917 ft, td 2975 ft.

K. D. Pardee's Castle-Tribal-198 3, nw ne nw 30-32n-5w, swab 365 bbls, Lower Cut Bank 2952-78 ft, 7-in 2925 ft, td 2978 ft.

Santa Rita Oil & Gas Co.'s Ritchie 5, c sw nw 5-33n-5w, Lower Cut Bank 2752-73 ft, swab 35 bbls, 7-in 2752 ft, td 2785 ft.

Texas Co.'s Frisbee Unit 1, sw se nw 26-36n-5w, 5.0 gas, Lower Cut Bank 2920-39 ft, 5½-in 2898 ft, td 2942 ft.

Pondera County — Midway: Hageman & Pond's Rispin 1, se se nw 20-28n-1e, 1½ mi e extension, pump 27 bbls 44.1-gr, Sunburst sand 1736-65 ft, saturation 1750-65 ft, td 1765 ft.

Toole County—Kevin-Sunburst: J. H. Agen's 2, se se nw 16-35n-3w, pump 200 bbls, acid 500 gals, Ellis-Madison contact 1818-21 ft, td 1821 ft.

Coolidge & Coolidge's Waite 3-B, se nw se 13-35n-2w, Ellis-Madison contact 1534 ft, abnd 1566 ft.

Toole County—South Shelby: Napar Oil & Gas Co.'s Nadeau 1, nw nw se 11-31n-3w, 1½ mi s of discovery, .5 ft gas, Sunburst sand 1235-41 ft, td 1241 ft.

MONTANA WILDCATS

Pondera County—Oil Discovery: Texas Co.'s Schlepp 1, se se se 21-27n-2w, Brady area, pump 25 bbls, Sunburst sand 1450-82 ft, shot with 30 qts 1470-82 ft, pb 1482 ft fr wtr in Madisons 1719-25 ft, td 1725 ft.

Teton County—Failure: Northern Ordnance, Inc.'s Hargrave 1, c ne se 27-25n-7w, Teton area, Sunburst 3875-3900 ft, Madison 4130-4278 ft, abnd 4278 ft.

Toole County — Failures: Northern Ordnance's Prodger 1, c se se 29-32n-2e, East Shelby, Sunburst 1674 ft, abnd 2902 ft.

Northern Ordnance's State 1-D, c nw nw 30-32n-2e, Madison 1630 ft, abnd 1647 ft.

NEW MEXICO

Eddy County: Bassett & Birney's Kimbell 2, sw sw se 26-18s-26e, flow 16 bbls, 2-in, shot 390 qts 1020-1115 ft, td 1238 ft, pb 1115 ft.

Brewer Dr. Co.'s Etz 1, 1980 ft snl 510 ft wel 25-16s-30e, flow 72 bbls, 2-in, shot 140 qts 3020-90 ft.

W. F. Dodson et al's Parke 3, s sw ne 3-17s-30e, flow 106 bbls, 2-in, shot 130 qts, 2960-3010 ft, td 3021 ft.

Penn-Surgical Co.'s Miller 1, c sw nw 5-18s-29e, flow 140 bbls, 2-in, shot 200 qts 2670-2710 ft, td 2730 ft.

Premier Pet. Corp.'s State 1, c ne nw 32-17s-30e, flow 475 bbls, 2-in, shot 200 qts 3048-88 ft.

R. R. Wooley et al's Arnold 5-B, c nw se 27-17s-30e, flow 130 bbls, 2-in, shot 130 qts 3143-82 ft.

Harvey E. Yates et al's State 2, 2085 ft out nec, 16-19s-30e, flow 100 bbls, ¼-in, lime 1728-80 ft.

Lea County—Maljamar: R. W. Fair & C. M. Pope, Jr., Foundation's Johns 2-B, c ne se 26-17s-32e, elev 384 ft, swab 50 bbls, shot 880 qts 3976-4276 ft, 50 qts 3480-3505 ft, td 4289 ft, pb 3557 ft.

NEW MEXICO OLD WELL DEEPENED

Lea County—Mattix: Kenwood Oil Co.'s State-Texaco 1, ne ne nw 32-24s-37e, otd 3587 ft, flow 6 bbls, plus 350 bbls wtr, sandy-lime 3480-3658 ft, td 3771 ft, pb 3658 ft.

OKLAHOMA

Carter County—Healdton: Sinclair Prairie's Mullen 23, c se ne 4-4s-3w, sand 1061-74 ft, 1074 ft.

Cleveland County—Stella: Deep Rock et al's Lane Trustee 1, ne ne nw 11-10n-1w, Dolomite 6487 ft, wtr 6664-65 ft, abnd 6665 ft.

Creek County—Deep Fork: Tibbins' E. Wilson 8, se se ne, Prue 2353 ft, shot 60 qts, pump 25 bbls, 2370 ft.

Creek County—Glenn: Gulf's Anderson 31, c nl sw nw, Glenn sand 1576-1726 ft, 1729 ft.

Gulf's Anderson 32, sw nw nw 9-17n-12e, Glenn sand 1595-1754 ft, 1759 ft.

Logan County — Crescent: Sunray's Wells "B" 1, sw se sw 23-17n-4w, Layton 4958 ft, shot 50 qts, pump 100 bbls, 4986 ft.

Logan County—Lovell: Champlin Ref's Fry 1, sw ne se 9-18n-4w, Hoover sand 3290-95 ft, 5,000,000 gas, 6212 ft, pb 3445 ft.

Marshall County—Isom Springs: E. L. Gill's Anoatubby 1, ne ne ne 6-8s-6e, Top sand 542 ft, pump 5 bbls oil, 15 wtr, 560 ft.

Okfuskee County—NE Dill: Midco et al's Rinehart 1, se sw se 13-12n-8e, Cromwell 3492 ft, flow 300 bbls oil, ¾-in 300,000 gas, 3516 ft.

Blackwell's Seran 1, c nw nw 19-12n-9e, Cromwell 3506-26 ft, shot 10 qts, flow 107 bbls, 3531 ft.

Osage County—Osage City: Birch et al's 15, c s½ 36-22n-8e, sand 585 ft, abnd 640 ft.

Osage County—Burbank: Phillips' 17, c w½ Burbank 2951 ft, 3019 ft.

Osage County: Phillips' Osage 16, nw nw nw Bartlesville 2973 ft, 2975 ft.

Phillips' C17, nw nw sw 32-27n-6e, 2935 ft.

Osage County—S. Hickory: Blackwell's 3, nw nw sw, sand 1022-64 ft, shot 110 qts, pump 52 bbls, 1065 ft.

Payne County—Garr: L. B. Jackson's Hudson 1, c ne nw 10-19n-5e, Dolomitic sand 3666 ft, no shows, abnd 3675 ft.

Seminole County—E. Konowa: McIntyre et al's Osborn 2, sw se ne 11-6n-6e, Cromwell 2762-2820 ft, abnd 2944 ft.

OKLAHOMA WELLS DEEPENED

McClain County—Byers: Phillips' McAfee 1, c se ne 21-5n-3e, sand 4005 ft, PN to 3667 ft, 2000 gals acid from Viola 3640-69 ft, otd 3598 ft, abnd 4008 ft.

Pottawatomie County—St. Louis: Magnolia's Tull Fyke "C" 3, sw se se 20-7n-5e, 2nd Wilcox 4252 ft, 2000 gals acid, pump 4 bbls, hole full wtr, otd 2862 ft, abnd 4263 ft.

Seminole County — Seminole City: Sinclair Prairie's Strothers 8, nw ne se 27-9n-6e, 2nd Wilcox 4280 ft, pump 12 bbls oil, 200 wtr, otd 4207 ft, 4303 ft.

OKLAHOMA WILDCATS

Creek County—Failure: L. B. Jackson's Salsman 1, ne nw 29-17n-11e, Wx 2867 ft, sand 2930 and 2908 ft, Lmy sd 3002-67 ft, wtr 3065 ft, abnd 3067 ft.

Jefferson County—Failure: Bridwell's Grogan 1, sw se se 35-7s-6w, dr 1779 ft in lime, abnd 2502 ft.

Kay County—Failure: Tidewater's Burks 1, ne sw se 21-28n-1w, Wx 3518 ft, SO Corec 3526-28 ft, abnd 3742 ft.

Love County—Failure: Mid-Continent's Lowman 1, se ne se 34-6s-2e, show oil 4564 ft, McLish 4640 ft, abnd 6000 ft.

Noble County—Failure: Herndon Drlg Co.'s Nichols 1, nw nw ne 1-21n-3e, Wdf 4154 ft, Misener 4195 ft, Dol 4196 ft, Wilcox 4208-16 ft, abnd 4216 ft.

Sinclair Prairie's Bradbery 1, ne se nw 29-22n-1w, Wilcox 5048 ft, abnd 5139 ft.

Deep Rock's Hayton 1, ne ne nw, 29-24-n-2e, abnd 4595 ft.

Payne County—Failure: Ingling & Parker's Davis 1, se se se 24-18n-1e, abnd 4763 ft.

Ingling & Parker's Mary Bryant 1, sw sw se 6-18n-5e, lcn, abnd.

Payne County—Discovery: Skelly's Simpson 1, sw sw se 30-19n-5e, Arb 4045 ft, pb 3680 ft, 38,000,000 gas fr Misener sand, 38,-450 gas spray oil, 550 lbs rock pressure, td 4086 ft.

EAST TEXAS

Franklin County—New Hope: Tide Water-Seaboard's Lester Gilbert 1-A, 440 ft out swc w-48 ac blk 6, John Maximillian sur, dual producer, elev 427 ft, flow 228 bbls 42-gr, gas-oil ratio 214/1,10/64-in, perf 7285-7301 ft, flow 187 bbls 48-gr 472/1, 5/32-in, (Travis Peak) open hole 7885-7970 ft, td 8044 ft.

Hunt County—Campbell: Stanolind's Hamilton 1, 330 ft out swc 88-ac lse, Chas C. Dale sur, elev 695 ft, Georgetown 3830 ft, Goodland 4292-4316 ft, Paluxy 4336 ft, pump 224 bbls, plus 2 bbls water, sand 4340-52 ft.

Van Zandt County—Van Shallow: T. Armstrong & Finlaysen's McGee 5, 300 ft ewl 450 ft snl blk 20, Wm. Daniel sur, pump 17 bbls, sand 1230-42 ft.

Wood County—Quitman: Chas. L. McMahon's Blalock 1, 2500 ft ewl 3575 ft snl H. Anderson sur, elev 453 ft, Paluxy 6370 ft, abnd 6400 ft.

EAST TEXAS WILDCATS

Hunt County—Failure: Stanolind's Bickley 1, 330 ft out nec 74-ac lse, J. M. Williams sur, mi se Commerce, elev 515 ft, Comanche 3740 ft, Goodland 4530 ft, Paluxy 4565 ft, abnd 4698 ft.

Kaufman County—Failure: A. P. McGee et al's General American Life 1, 330 ft snl 1850 ft from m/w/e line, A. Owens sur, Pecan 1410-1812 ft, Austin 2330-2760 ft, Woodbine 3104 ft, Georgetown 3770 ft, abnd 4200 ft.

NORTH TEXAS COMPLETIONS

Archer County—Vogtsberger: A. C. Huckleberry and Walter Cline's Sloop-Sinco 3, 467 ft out nwc H&TC 8, blk 1, flow 202 bbls ¼-in, shot 310 qts 4711-60 ft, td 4783 ft.

L. T. Burns et al's Frerich 3, 1400 ft ewl 1450 ft nsl sec 106, blk 4, Clark-Plumb sur, abnd 1230 ft.

Miller & Ward's Herron 6, 1980 ft wel 1530 ft nsl sec 12, blk 5, Clark-Plumb sur, pump 5 bbls, 848-57 ft.

Rathke Oil Co.'s Cowman 10, 200 ft snl 1120 ft wel lot 8, Jefferson CSL sur, pump 10 bbls, shot 10 qts 1120-22 ft, td 1130 ft.

W. C. Young et al's Richardson 2, 550 ft snl 680 ft wel, W. C. McCune sur, abnd 1160 ft.

Baylor County—Seymour: British American's Green 9-D, 2375 ft nsl 1202 ft wel T&NO 215, Palo Pinto 2574 ft, flow 109 bbls 37-gr, 2-in, acid 500 gals, 2574-76 ft.

Clay County: Texas Co.'s Hansard 10, 150 ft ewl 1696 ft nsl lse, F. Longario sur A-286, pump 9 bbls, sand 1089-1104 ft.

Cooke County—Walnut Bend: Sinclair Prairie's Laura McDaniel 1, 330 ft snl 659 ft ewl sec 80, Fannin CSL, Winger 5555 ft, flow 886 bbls, 2-in perf 5575-95 ft, td 5597 ft.

Jack County—Ellis: Hanlon & Buchanan's Ellis-DuBose 2-B, 3131 ft ewl 2758 ft nsl lot 6, J. W. Williams sur, Bend 4800 ft, Marble Falls 5122 ft, Ellen 5786 ft, flow 108 bbls, plus 16 bbls water, ¼-in, acid 3000 gals, perf 4808-18 ft, td 5804 ft, pb 4834 ft.

Hanlon & Buchanan's Jones 2-B, 495 ft e of m/w/w 477 ft s of m/s/n lines, J. W. Williams sur, Bend 4730 ft, flow 420 bbls, ¼-in, acid 3000 gals, 4734-56 ft.

Jack County — McDonald: Standard of Texas-Hanlon & Buchanan's Carter-Shell 2, 495 ft snl 1485 ft wel lot 5, Wm. McDonald sur, pump 37 bbls plus 4 bbls wtr, shot 20 qts nitro 3497-3520 ft, td 3520 ft.

Jack County—Peek: Standard of Texas-Hanlon & Buchanan's Cooper 1, 1206 ft ewl 190 ft nsl TE&L sec 3314, Bend 4569 ft, Marble Falls 4900 ft, abnd 5003 ft.

Montague County—Hults & Owens: H. F. Wilcox O&G Co.'s Tucker 1, 1400 ft nsl 467 ft wel TE&L sec 2836 ft, Palo Pinto 2434 ft, Bend 6085 ft, abnd 6303 ft.

Wichita County: Culbertson Co.'s Waggoner Bros. 93, 544 ft snl 967 ft wel BS&F Ry, sec 13, abnd 676 ft.

Akin-Dimock et al's Cooper Bros. 1, 475 ft snl 2200 ft ewl of tract, H. Hastie sur A-92, abnd 1331 ft.

G. E. Kadane & Sons' Bradley 2-C, 300 ft out nwc, S. Holloway sur A-497, abnd 1831 ft.

Paradise Oil Co.'s Waggoner Est 6-E, 760 ft nsl 660 ft from m/e/e line, T. C. Ry sur A-816, flow 480 bbls, ½-in, sand 1988-2013 ft, td 2025 ft.

Wilbarger County—Fargo: Texas Co.'s Anderson 3, 380 ft out nec sw se H&TC 33, blk 15, abnd 4681 ft.

Young County—Allar: Burk Royalty Co.'s Allar Co. 4-B, 3916 ft wel 4905 ft nsl of s-1185 ac tr, TE&L sec 3409, Bend 3558 ft, abnd 3579 ft.

NORTH TEXAS OLD WELL DEEPENED

Montague County: Continental-Seitz-Comegys & Seitz's Hott 7, 780 ft s 2658 ft e of nwc, E. O'Conney sur A-58, otd 1617 ft, pump 26 bbls 1729-33 ft, td 1758 ft.

NORTH TEXAS WILDCATS

Archer County: Taylor Pool-New Oil Pay-J. A. McCarty and J. P. Coleman's Taylor 1, 330 ft out nec lot 13, sec 17, ATNCL sur, ⅝ mi ne of Mississippi pumper, KMA 3547 ft, Bend 4624-4704 ft, Barnett 4804 ft, Miss 4900 ft, Ellen 4937 ft, flow 872 bbls, ¾-in, 1020-380 lbs, td 4973 ft.

Montague County—Failure: Lion's Freeman 1, 861 ft fr nw 508 ft sw lines, W. R. Freeman sur A-1342, Bend 6390 ft, Marble Falls 6664 ft, Forestburg 6825 ft, Barnett 7535 ft, Viola 7943 ft, Simpson lime 8083 ft, sand 8480 ft, Ellen 8580 ft, abnd 8616 ft.

Wichita County—Failure: A. R. Dillard et al's Waggoner 1, 330 ft nsl 1032 ft ewl blk 2, Wm. Mayer sur, KMA 4149 ft, Bend 5080 ft, Barnett 5156 ft, Ellen 5284 ft, abnd 5532 ft.

Young County—Failure: R. J. Watson et al's Jones 1, 200 ft snl 960 ft ewl of e-120 ac n½ TE&L 251, abnd 703 ft.

LOWER TEXAS COAST

Jackson County—North LaWard: Stewarts' Brandes 2, 330 ft fr s, 1301 ft fr wl 130-ac tr, Pickering Rch, Jessie White sur, 5½-in 5234 ft, perf 5224-33 ft, flow 38 bbls, 3/32-in, td 5234 ft.

Stewarts' Brandes 3, 330 ft fr sl, 3281 ft fr wl 130-ac tr, Pickering Rch, Jessie White sur, 5½-in 5233 ft, perf 5211-20 ft, flow 77 bbls, ¼-in, td 5233 ft.

Sun's Brandes 1, 330 ft fr s and el lot 13, Pickering Rch subdvn, Jessie White sur, 79-ac lse, 5½-in 5225 ft, perf 5210-20 ft, pumped 77 bbls, td 5229 ft.

Tide Water's Mauritz 2, 330 ft fr sl and 2946 ft fr wl 134-ac tr, Patrick Scott sur,

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5½-in 5222 ft, perf 5206-10 ft, flow 2,500,000 gas spray dist, ⅛-in, td 5222 ft.

Jim Wells County — Seeligson: Magnolia's Seeligson 47, 11,655 ft fr el and 1980 ft fr sl, A. Ramirez gr, dual completion, 7-in 5945 ft, perf 5195-5204 ft, flow 98 bbls, 7/64-in; perf 5890-95 ft, flow 102 bbls, 7/64-in, td 6005 ft.

Sun's Canales 13, 660 ft fr wl and 5802 ft fr nl, J. E. Stevens sur, 5½-in 6100 ft, perf 6038-45 ft, flow 143 bbls, ⅛-in, td 6100 ft.

Karnes County—Hobson: Seaboard's Rzeppa 3, 463 ft fr nl and 858 ft fr el 101-ac lse, Don Erasmo Seguin gr, abnd 4018 ft.

Karnes County—Porter: Continental's Porter 1, 776 ft fr sel and 1437 ft fr nwl 275-ac tr, Victor Blanco gr, 6-in 4070 ft, perf 4056-61 ft, flow 145 bbls, 5/32-in, td 4070 ft.

San Patricio County — Odem: Seaboard's Parker 3-B, 500 ft fr s and el sec 2-A, Juan Hart & Sons gr, abnd 7200 ft.

SOUTHWEST TEXAS

Duval County—Conoco Driscoll: Continental's Driscoll 23-B, 1775 ft fr sl and 14,500 ft fr el, 12,000-ac lse, SK&K sur, 6-in 2988 ft, flow 131 bbls 14 hrs, ¼-in, td 2998 ft.

Duval County—Sejita: Navarro's Morgan 1, 80-ac tr, blk 6, sec 28, San Pedro de Charco Redondo gr, 5½-in 5856 ft, perf 5825-28 ft, flow 247 bbls, 3/16-in, td 5870 ft.

Jim Hogg County—Colorado: Humble's King Ranch-Colorado 74-B, 8488 ft fr wl and 660 ft fr sl 8376-ac tr, Las Moretas gr, 5½-in 3120 ft, flow 226 bbls, 3/16-in, 3138 ft.

Starr County—Rincon: Continental's Slick 8-D, 1636 ft fr nl and 2183 ft fr el CCSD&RGNG sur 219, abnd 4050 ft.

Starr County—Ross: W. L. Goldston's Garza 1, 330 ft fr wl and 500 ft fr sl 451-ac tr, share 44, J. S. de la Garza porcion 88, 5½-in 2648 ft, flow 48 bbls, 3/16-in, td 2555 ft.

SOUTHWEST TEXAS WILDCAT

Duval County — Failure: Frank & George Frankel's Lowe 1, 1980 ft fr sl and 660 ft fr wl AB&M 414, abnd 3432 ft.

SOUTH CENTRAL TEXAS

Atascosa County—Imogene: Humble's Enlow 1, center lot 461, blk 17, Rogue Mauricio sur 604, 5½-in 7619½ ft, 2000 gals acid, flow 258 bbls, 3/16-in, td 7635 ft.

SOUTH CENTRAL TEXAS WILDCAT

Wilson County—Failure: Ralph E. Fair's McKinney 1, 330 ft fr sl and 600 ft fr el 50-ac lse, Ezekial Smith sur, abnd 4926 ft.

TEXAS GULF COAST

Brazos County—Millican: Phillips' Holloway 1, 39-ac tr, William Devers sur, abnd 3638 ft.

Chambers County—Anahuac: Humble's Broussard 14, 500 ft fr el sec 63, 642-ac tr, H&TC sur, abnd 7034 ft.

Fort Bend County—Thompson: Gulf's Scanlan 7, 100-ac tr, William Hall sur, abnd 8508 ft.

Jefferson County—Stowell: Gulf's Blauw-Ruidenga 1, 40-ac unit se¼ blk 4, dual completion, set 5½-in 7759 ft, perf 7579-7609 ft, flow 471 bbls, 3/16-in, perf 7750-57 ft, flow 307 bbls, 5/32-in, td 7759 ft.

Glenn H. McCarthy's Blauw-Paetz 1, sw¼ blk 3, Koch subdvn, L. Lopez sur, dual completion, set 5½-in 7903 ft, perf 7532-56 ft, flow 302 bbls, 11/64-in, perf 7804-18 ft, flow 341 bbls, 11/64-in, td 7903 ft.

Glenn H. McCarthy's McLean 1, 1 mi ne prodn, 80-ac lse, Theo. F. Koch subdvn, abnd 10,340 ft.

Matagorda County—South Buckeye: United North & South's Stoddard 10, 3458-ac tr, G. B. M. Cotton sur, abnd 9311 ft.

TEXAS PANHANDLE

Gray County: Skelly Oil Co.'s Taylor 12, ne se sw H&GN 7, blk B-2, pump 107 bbls, shot 480 qts 2915-3010 ft.

Texas Co.'s Jackson 6, 1263 ft snl 662 ft wel se H&GN 94, blk B-2, pump 295 bbls, shot 710 qts 2960-3068 ft, td 3072 ft.

Hutchinson County: Shamrock O&G Corp.'s Stewart 14, 1980 ft nsl 1880 ft ewl AB&M sec 19, blk M-16, pump 174 bbls, 3125-40 ft.

WEST CENTRAL TEXAS

Coleman County: Anzac Oil Corp. et al's Hinds 1, 1870 ft nsl 2480 ft wel, J. H. Barkley sur 700, pump 141 bbls 44-gr, Upper Fry sand 2094-98 ft.

Jones County—South Noodle: Humble's Huddleston 3-C, 523 ft nsl 1457 ft wel ne T&P 33, blk 18, pump 223 bbls, acid 500 gals 2408-16 ft.

Stith-Jones-Stasney et al's Cannon 3, 1350 ft snl 330 ft wel blk 81, DeWitt CSL, flow 720 bbls, 2-in, acid 2000 gals 2610-49 ft, td 2690 ft, pb 2665 ft.

Taylor County—Merkel: Fain & McGaha's Buford 3, 1605 ft snl 330 ft ewl e-90 ac lot 5, leag 124, Grimes CSL sur, pump 177 bbls, acid 1000 gals 2576-83, 2590-95 ft, td 2625 ft.

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WEST CENTRAL TEXAS OLD WELL DEEPENED

Jones County — Wimberly: Clark-Cowden Dr. Corp.'s Mashburn 1, 330 ft out sec blk 85, leag 126, DeWitt CSL, otd 2368 ft, dual completion, flow 1560 bbls, ¾-in, acid 1000 gals 2494-2521 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Failure: North American Oil Consolidated's Minter 1, nw nw se T&P, blk 15, elev 1711 ft, abnd 2507 ft.

Shackelford County—Failure: Roeser-Pendleton-Continental's Cook 2-A-141, 1707 ft snl 2310 ft wel ET Ry, sec 141, abnd 1781 ft.

Taylor County—Failure: F. Craig Morton et al's Caldwell 1, 330 ft se of m/n/nw cor T&P 83, blk 14, elev 1673 ft, abnd 1833 ft.

WEST TEXAS

Andrews County—Embar-Ellenburger: Phillips University-Andrews 54, 2034 ft wel 1993 ft snl sec 31, blk 10, Ellen 7906 ft, dual completion, flow 273 bbls, ½-in, acid 2000 gals, Clear Fork perf 6180-6230 ft, flow 744 bbls, ½-in, acid 2000 gals Ellen perf 7965-80 ft, td 7992 ft.

Cochran County—Slaughter: Continental's Dean 4-91, 709 ft wel 961 ft nsl leag 91, Lipscomb CSL, flow 878 bbls, 3-in, acid 12,000 gals 4995-5048 ft.

Devonian et al's Duggan 7-C, 510 ft out swc lab 6, leag 54, Oldham CSL, flow 582 bbls, acid 12,000 gals 5045-80 ft.

Texas Co.'s Mallet 12-F, 580 ft out nwc lab 17, leag 51, Scurry CSL, flow 837 bbls, acid 10,000 gals 4985-5045 ft.

Crockett County—Noelke: Moore Explo. Co.-Olson Oil Co.'s Noelke 1, 330 ft snl 990 ft wel sec 60, blk GG, W. T. Mullins sur, pump 63 bbls, sand 1587-1645 ft.

Gaines County—Seminole—Magnolia-Atlantic's H&J 7-193, c se nw WT Ry sec 193, blk G, flow 541 bbls, ½-in, shot 150 qts 5100-80 ft, td 5192 ft.

Gaines County—Wasson: Amon G. Carter's Langdon 4-A, nw se ne PSL 43, blk AX, flow 684 bbls, ¾-in, acid 9000 gals, 4935-5020 ft.

Hockley County—Slaughter—L. M. Glasco et al's Mallet 23-C, 580 ft out nec lab 7, leag 48, Edwards CSL, flow 613 bbls, acid 12,000 gals 4860--4970 ft.

Don McDonald et al's Ratliff 1, 468 ft snl 829 ft wel n-28 ac w½ lab 3, leag 42, Rains CSL, flow 447 bbls, acid 10,000 gals 4862-4903 ft.

T. F. Morrow et al's Mallet 49, 580 ft out swc lab 3, leag 48, Edwards CSL, flow 265 bbls, acid 12,000 gals 4896-4941 ft.

T. P. Coal & Oil Co.'s Rains 6, 440 ft out nec lab 5, leag 42, Rains CSL, flow 763 bbls, 2-in, acid 10,000 gals 4850-4905 ft.

Howard County: Stanolind's Clay 3-B, nw sw nw W&NW sec 139, blk 29, pump 167 bbls, acid 2000 gals 2410-2520 ft.

Scurry County—Sharon: D. & R. Oil Co.'s Van Norman-Shell 3, c se nw H&TC 131, blk 97, pump 119 bbls, shot 940 qts 2214-2415 ft, td 2454 ft.

Winkler County—Eaves: Harry Adams and Bradley's Eaves-Gulf 2-B, 660 ft wel 1980 ft snl PSL 5, blk C-23, flow 312 bbls, plus 13% wtr, ½-in, perf 3095-3125, 3140-75 ft, td 3190 ft.

Winkler County—Keystone: Standard of Texas' Baird 34-13, 2404 ft ewl 1880 ft nsl PSL 13, blk B-3, flow 175 bbls, td 3290 ft.

WEST TEXAS WILDCATS

Cochran County—Failure: Helmerich & Payne's Slaughter 1, 660 ft out nec lab 1, leag 116, Potter CSL, elev 3794 ft, anhydrite 2248 ft, salt 2400 ft, Yates 2750 ft, San Andres 3920 ft, abnd 5213 ft.

Pecos County—Failure: L. H. Choate and C. W. Brown's Barnes-State-Shell 1, 660 ft ne & se lines H&GN 132, blk 10, elev 2454 ft, abnd 1475 ft.

WYOMING

Big Horn County—Byron: Ohio's Wirth 1, c sw ne 25-56n-97w, pump 250 bbls, Tensleep 5322 ft, td 5500 ft.

Fremont County—Steamboat Butte: British American Oil Producing Co.'s Tribal 2-E, ne sw nw 5-3n-1w, ¼ mi s extension, flow 200 bbls, Sundance 5119 ft, td 5172 ft.

Natrona County—Cole Creek: General Pet. Corp.'s 37-S-16 (State), nw se sw 16-35n-77w, pump 92 bbls, Shannon sand 4541-77 ft, td 4577 ft.

Natrona County — Salt Creek: Stanolind's Unit 26-T, c se nw 26-40n-79w, flow 317 bbls, ¼-in, Tensleep 3917 ft, 5½-in 3968 ft, td 3975 ft.

Park County—Elk Basin: Ohio's Elk-OPC-3 26, ne nw se 24-58n-100w, flow 3000 bbls, Tensleep 4274 ft, 5½-in 4407 ft, td 4474 ft.

Park County—Oregon Basin: Ohio's Sonners-1 7, ne nw se 8-51n-100w, pump 300 bbls, Embar 3592 ft, td 3794 ft.

WYOMING WILDCATS

Albany County — Failure: Ricgar Oil Co.'s Fuller 1, nw ne ne 7-15n-75w, East Big Hollow, abnd 895 ft.

Carbon County—Failure: Sinclair-Wyoming Oil Co.'s Unit 1, nw ne se 32-24n-88w, Dakota 1480 ft, Lakota 1595 ft, Jelm 2094 ft, Embar 3265 ft, Tensleep 3406 ft, elev 6506 ft, td 4351 ft.

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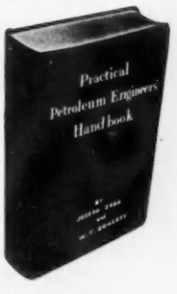
PRACTICAL PETROLEUM ENGINEERS' HANDBOOK

SECOND EDITION—REVISED AND ENLARGED

By JOSEPH ZABA, E.M.M.Sc. and W. T. DOHERTY



This book was written by practical oil men. The tables were compiled so that they can be used by anyone to meet practical field situations without further calculations, and will fit 99% of the conditions under which the average operator is working in the field.

The second edition of the PRACTICAL PETROLEUM ENGINEERS' HANDBOOK has been completely revised and enlarged. The many changes which have been made during the past two years in the Standard Specifications of the American Petroleum Institute, particularly in pipe specifications, are incorporated in the new edition. Several tables are rearranged and charts enlarged to facilitate their use. Table of Contents and Index are more complete. Also about 90 pages of new formulae, tables, charts and useful information have been added.

This handbook was compiled and published for the purpose of saving the time of operators, engineers, superintendents, foremen and others.

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Chapter I — General Engineering Data
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Chapter III — Power Transmission
Chapter IV — Tubular Goods
Chapter V — Drilling
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United States Wildcat Starts

ARKANSAS

Ouachita County: Jack Carnes' Camden 1, 11-12s-16w, dr.

Miller County: Phillips' J. G. McWilliams and E. E. Willis 1, 660s 1320w ne cor n½ 18-18s-27s, lcn.

Union County: Phillips' H. F. Andrews 1, se se 27-18s-13w, lcn.

CALIFORNIA

Fresno County: Texas Co.'s S.P. 58-21, 21-19-16, Coalinga Northeast area, rig.

Kern County: Texas Co.'s 6, nw sw sw 12-31-22, Belgian Anticline area, mim.

Di Giorgio Fruit Co.'s Di Giorgio 5, se se sw 10-31-29, Mountain View area, rig.

Shell's Utting 3, ne nw sw 7-27-19, Shale Point area, lcn.

Los Angeles County: Mac Millan Petroleum Corp's Walnut Creek 1, se se ne 22-1-9, Pomona area, grading.

William Y. Lee's Corehole 1, c se se 21-2-8, Chino area, coring 620 ft.

Sacramento County: Amerada's Gwerder 1, 660 ft due e of c 36-5-5, Thronton area, mim.

San Joaquin County: Richfield's East Stockton 1, sw se se 5-1-8, Stockton area, rig.

C. M. Morse's Rhode Island 1, 500 ft s 450 ft w c/l, State Highway 101, 450 ft w of ely bdry, Rhode Island Estate Ranch, 2-4-30, Capitan area, lcn.

ILLINOIS

Clay County: Texas Co.'s Fred Weiler 1, ne ne sw 27-3n-7e, lcn.

Edwards County: Lewis Prod Co.'s I. Dunk 1-A, nw nw nw 36-2s-10e, dr.

Fayette County: Leland Waggoner & J. J. Callahan's H. E. Littleton 1, ne sw 22-5n-4e, dr.

Franklin County: E. S. Adkins' Cambon-C. W. & F. Coal Co. 1, ne sw nw 16-7s-2e, lcn.

Jefferson County: Lario O. & G. Co.'s Russell 1, ne ne nw 33-2s-4e, lcn.

Marion County: Nat'l. Assoc. Pet Co.'s W. S. Carter 1, sw nw sw 9-3n-4e, lcn.

Wayne County: Texas Co.'s E. Hoffee 1, ne ne ne 9-1n-6e, lcn.

Carter and Pure's Puckett 1, sw se 7-es-8e, lcn.

White County: Smokey Oil Co.'s Sandy Run Lake Club 1, se sw se 7-7s-8e, dr.

INDIANA

Daviess County: E. S. Holman's R. Rudolph 1, nw nw nw 24-1n-6w, lcn.

Pike County: Clark Nye's H. L. Hahn 1, 18-7s-11w, lcn.

Wabash County: George W. Boyce's State of Indiana 1, 23-3s-14w, lcn.

KANSAS

Dickinson County: Jones & Hill's Lauxman 1, se ne ne 31-16s-1e, lcn.

Nemaha County: Ohio's Lamparter 1, c ne sw 3-2s-14e, mit.

Rush County: Davis-Child's Henderick 1, c nw sw 25-16s-18w, lcn.

Russell County: J. M. Huber & Bay Pet.'s Holland 1, nw ne sw 31-13s-13w, lcn.

Saline County: Lindsay & Duffield's Robson 1, se ne ne 12-15s-1w, c&p.

KENTUCKY

Allatin County: Gulf's Carnegie Tech 1, ne sw nw 18-V-74, comp.

Butler County: W. A. Schuller's Givens' 1 (3), 14-H-33, lcn.

Carroll County: Gulf's Riddle 1, 12-T-74 sw nw sw, comp.

Daviess County: Harry Faber's W. W. Probes 1, 19-0-32, lcn.

Grayson County: Mar-Hill Oil Co.'s Downs 1, 20-L-41, lcn.

Hancock County: Ky Nat. Gas Co.'s Anna Conner 1, 17-P-ee, lcn.

Henderson County: C. D. Burbank's Fee 2, 9-P-21, dr.

McLean County: Kingwood's A. Wittmer 1, 6-K-28, lcn.

NORTH LOUISIANA

Morehouse Parish: Union Producing Co.'s Crossett 1, swc 6-22n-9e, lcn.

Webster Parish: R. J. Montgomery's Hortman 1, ne ne 31-20n-10w, lcn.

W. E. Stewart's Woodard & Walker 1, 9-17n-8w, lcn.

MICHIGAN

Allegan County: Rex Oil & Gas Co.'s Spielstra 1, se se se 4-4n-11w, lcn.

Arenac County: Ervin Major's Proulx 1, ne ne nw 16-18n-4e, rig.

Clare County: Sun's Van Deusen 1, n½ nw nw 14-20n-4w, rig.

Iosco County: Stork Oil Co.'s National Gypsum Co. 1, n½ ne nw 16-21n-6e, dr.

Kent County: Columbia Oil & Gas Co.'s Budenger 1, sw sw ne 19-5n-12w, rig.

Osceola County: Sun's Postal 1, s½ se se 5-18n-8w, dr.

Wayne County: Voorhees Dr. Co.'s Theison 1, ne se se 16-4s-9e, rig.

MISSISSIPPI

Yazoo County: Northern Ordnance's Koppers 1, sw sw sw 56-13n-2w, lcn.

NEW MEXICO

Eddy County: Forrest E. Levers et al's Levers-State 2, c ne nw 26-20s-28e, machine.

Estelle H. Yates et al's Lane 1, c ne nw 21-19s-30e, machine.

Roosevelt County: Continental-Nat'l Ref. Co. and Whaley Co.'s V. Glenn-Alston (Federal) 1, c se se 20-7s-35e, Milnesand prospect, lcn 8000-ft test.

OKLAHOMA

Beckham County: Okla. Nat'l Gas' Freeman 1, c nw ne 7-9n-21w, dr 915 ft.

Choctaw County: Charles C. Lowery's McCustion 1, c, sw sw ne 12-6s-19e, lcn.

Creek County: Dale Sneed's Eason 1, sw nw se 12-14n-10e, lcn.

Garfield County: Ingling & Parker's King 1, (ow dd) ne se sw 12-21n-3w.

Garvin County: C. W. Roodhouse's Wilson 1, 24-3n-1e, lcn.

EAST TEXAS

Anderson County: V. J. Meyer et al's P. de C. Ball 1, 1150 ft se 11,500 ft sw lines, Muriana R. Palacious sur, mim for 6000-ft test.

Henderson County: Continental-Ed Hyde and Pete Wiggins' Palmer-Magnolia 1, 330 ft out nwc, R. D. Palmer sur, spd on Woodbine test.

Smith County: Sohio Producing Co.'s D. S. Wright 1, 1130 ft n 13,947 ft e of nec Francis Gilkerson sur A-405, but in Jose M. Garcia sur A-368, lcn Paluxy test.

Van Zandt County: Delta Dr. Co.-C. M. Beckett & H. H. Torrance's Gipson-Echols Unit 1, 467 ft from m/s/n 467 ft from m/e/e lines, J. Walker sur, 3 mi nw Grand Saline, rur for Travis Peak test.

Wood County: Danciger O&R's J. O. Sparks 1, 1776 ft w 330 ft s of nec, Elijah Allen sur, mim for Paluxy test.

TEXAS PANHANDLE

Potter County: Canadian River Gas Co.'s Masterson 8-A, 1065 ft ewl 6501 ft snl H&TC 78, blk 47, lcn, deep test.

WEST TEXAS

Crane County: John I. & P. D. Moore's Barnsley 2, c ne ne PSL 42, blk 32, lcn 4500-ft test.

Gulf's Waddell 43-O, 2010 ft nsl 1980 ft wel, PSL 20, blk B-26, lcn Ordovician test.

TEXAS GULF COAST

Chambers County: Gulf's Williams 1, w of Stowell, 102-ac tr, F. Valmore sur, lcn 8000-ft test.

Colorado County: Charles E. Fraser's Tracy 1, 163-ac tr, I&GN 13, lcn 6800-ft test.

Fayette County: Jack W. Frazier's Zoch 1, Winchester area, 200-ac lse, James S. Lester sur, lcn 5100-ft test.

Jefferson County: Glenn H. McCarthy's Tyrell 1, W. C. Dunshie (I&GN 82) sur, nw Stowell field, lcn 9500-ft test.

Matagorda County: Atlantic's Yountze 1, 162-ac tr, W. H. Gainer sur 550, lcn 10,000-ft test.

LOWER TEXAS COAST

Live Oak County: W. Earl Rowe's Meyer 1, Refugio County School Land sur, 5½ mi nw Tynan, lcn 4700-ft test.

SOUTH CENTRAL TEXAS

Caldwell County: Churchill Oil Co.'s Mercer 1, 172-ac tr in Andrew Churchill Lge, 3 mi ne Fentress, lcn 2200-ft Edwards test.

Gonzales County: South Basin Oil Co.'s Duderstadt 1, 374-ac tr, John L. Wood sur, lcn 5300-ft test.

Gonzales County: G. W. Strake's Weber 1, 788-ac tr Thomas Wright sur, lcn.

Wilson County: W. B. Phipps' Huebinger 1, 266-ac tr, Felipe Flau sur 9, lcn.

WEST CENTRAL TEXAS

Jones County: Great Lakes Carbon Corp.'s E. P. Hall 1, c w½ sw sw BBB&C Ry, sec 164, lcn 3500-ft test.

McCulloch County: D. H. Brock et al's S. E. Cox 1, 235 ft snl 745 ft wel of w 160 ac of Ficher & Miller sur 2482, lcn, 1100-ft test.

NORTH TEXAS

Archer County: Akin-Dimock et al's H. D. Skinner 1, 1341 ft nsl 1416 ft wel blk 20, Harris Club Ranch, lcn 1000-ft test.

Frank Wood et al's J. L. O'Keefe 1, 950 ft nsl on e line sec 32, blk 5, Clark & Plumb sur, lcn 1500-ft test.

Cooke County: Bridwell's W. H. Campbell 1, 694 ft snl 5556 ft ewl, O. F. Leverett sur A-667, dr 480 ft.

E. R. Perkins & W. R. Bourland's J. Danglemyer 1, 1600 ft snl 4600 ft wel ,Eleanor Langford sur A-566, lcn 1650-ft test.

Jack County: Paul Sampley et al's R. J.

Boyd 1, 1170 ft nsl 2500 ft wel of e-500 of n-1000 ac, I. N. Wright sur A-898, lcn 3500-ft test.

Montague County: H. F. Gibson et al's W. L. Boland 1, 640 ft nsl 766 ft wel, BS&F Ry, sur A-98, lcn 4500-ft test.

Texas Co.'s L. L. Cobb 1, 330 ft out sec, C. A. Barnes sur A-48, lcn.

Squeaks from the Bull Wheel

New Mother Hubbard

She went to the butcher's
For spareribs and suet,
But found that some others
Had beaten her tuet.
She said she would settle
For sausage or liver,
The butcher insisted
He had none to giver.
She pleaded for pork chops . . .
For meatballs . . . for mutton
The butcher said: "Lady,
I just ain't got nutton!"
—Montana Legionnaire.

Taken!

Customer: "Young man, what do I get for my money if I rent this apartment?"

Salesman: "You get a home, on which we pay your taxes, your insurance, your water bill, buy your coal, fire your furnace and hot water heater, furnish your window shades, gas stove, electric refrigerator, do your decorating and repairing, cut your grass, sweep your walks, clean your hall, pay light bill for your garage, empty your garbage, fight your battles with the neighbors . . . and you ask me what do you get for your money!"

Customer: "Pardon me for being so stupid—where do I sign?"

Explained

"She has a very magnetic personality."

"She ought to. Every stitch she has on is charged."

So He Did

An Englishman visiting Mount Vernon was so patronizing as to arouse the wrath of guards and caretakers, but it remained for a gardener to settle the gentleman:

"Ah-er-my man, the hedge! Yes, I see, George got this hedge from dear old England."

"Reckon he did. He got this whole blooming country from England."

A Poser

He: "You see, if we enter a companionate marriage we can live together a while and then, if we find we've made a mistake, we can separate."

She: "Yes—but—what'll we do with the mistakes?"

Cheapest Way Out

"Daddy, there's a girl in one of my classes with a hat exactly like my new one."

"I suppose that means you want money for another hat."

"Well, it would be cheaper than changing schools."

Observation

"I killed five flies today—three males and two females."

"How can you tell a male from a female?"

"Well, three sat on a beer bottle and two on the mirror."

Blitz Krieg!

The man had been watching the demolition squad for days without speaking. He was now the only spectator still interested. The squad foreman's curiosity was aroused. "Say, 'aven't you got anythin' better to do than watch us work?"

"Well, chum," said the man, removing his pipe from his mouth, "this is me old home. I'm kind of interested like."

"Lumme!" exclaimed the foreman. "Pack up, you blokes! This 'ere's the blighter we bin diggin' for."

Sure Cure

Shortly after two o'clock on a bitter cold morning a physician drove four miles in answer to a telephone call. On his arrival, the man who had summoned him, said "Doctor, I ain't in any particular pain, but somehow or other I've got a feeling that death is nigh."

The doctor silently felt the man's pulse and listened to his heart. "Uh, huh," he grunted, "have you made your will?"

The man turned pale. "Why, no, doctor, at my age—oh, doc, it ain't true, is it? It can't be true!"

"Who is your lawyer?"

"Higgenbotham!"

"Well, you had better send for him at once."

The patient, now white and trembling, went to the telephone and summoned the lawyer.

"Who's your pastor?" continued the doctor.

"The Rev. Kellogg Brown," mumbled the patient, trembling. "But, doctor, surely you don't think—"

"Send for the minister at once. Your father, too, should be called; also anyone else—"

"Oh, doctor, this is terrible! Do you really think I'm nearing the end?" The man began to blubber softly.

The doctor looked at him with steely eyes. "No, of course not. There's not a solitary thing the matter with you. But I'd hate to be the only man you've made a fool of on a night like this."

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Notes for the Equipment Buyer and User

Safety Face Shield

MINE SAFETY APPLIANCES COMPANY

Mine Safety Appliances Company, Pittsburgh, Pennsylvania, has developed the M.S.A. "H" face shield for quick attachment to type "K" M.S.A. Skullgard protective hat.

The shield provides durable and convenient protection for the face against flying particles and is readily assembled in the field, making possible easy adaptation to hats now in service.

Positive attachment is assured and the shield can be removed as quickly as it can be attached.

Clear, transparent visors, 14 x 6 inches of plastic, are employed. The visors are fastened to the combination unit in a practical manner, affording a simple and easy means of replacement. Visors are interchangeable.

The fibre visor retaining strap is mounted on a pivotal joint, allowing upward or downward movement of the shield to the position desired by the operator.

Well Service Unit

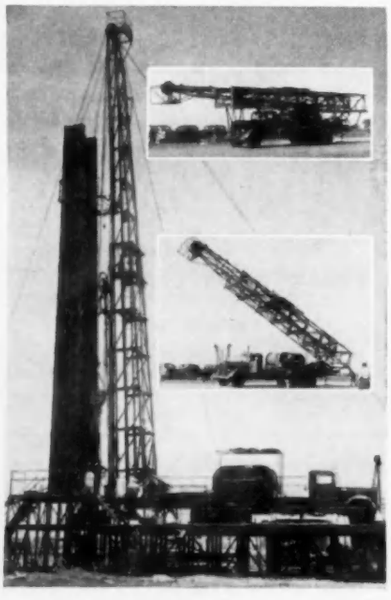
FRANKS MANUFACTURING CORPORATION

Franks Manufacturing Corporation, Tulsa, has introduced Model 7000 double-duty, self-propelled Telescoper unit for drilling or servicing wells.

Included as integral parts of the unit are a 96-foot derrick, drawworks, power plant, rotary table, crown block, and stacking board. Pumps for drilling operations are mounted on skids for handling by an auxiliary truck.

The derrick telescopes to 58 feet for over-the-road travel, with lines strung, reducing move-in time and rig-up to usually less than 45 minutes. Actual raising, extending and locking the derrick requires less than 10 minutes. A patented power screw raising and lowering mechanism and a self-locking device feature the unit. The derrick is equipped for handling rods and racking drill pipe or tubing.

The unit is designed for general use and will service wells up to 10,000 feet, is adaptable for deepening and clean-out work, and will handle shallow or medium depth standard drilling or deep slim-hole drilling. Being 100 percent portable, the outfit is well adapted for exploratory activities. The complete assembly is mounted on a single truck.



Franks Telescoper

Water Level Indicator

Yarnall-Waring Company, Philadelphia, has published a complete new bulletin on the application and operation of its remote water level indicator. The bulletin is illustrated and contains much detailed description of the indicator along with pictures of actual installations.

Pressure Treated Lumber

Koppers Company, Wood Preserving Division, Pittsburgh, has a new booklet on preserved wood in which there is a section devoted to uses of pressure-treated lumber in oil field construction. Pictured are a number of typical oil field installations, including pipe-racks, derrick foundations, over-water runways, tank substructures, off-shore derricks and storage tanks.

U. S. Steel Corporation's Wartime Expansion Completed

The greater part of United States Steel Corporation's $700,000,000 war expansion program has been completed and placed in operation and the remainder will go into production in the near future, Irving S. Olds, chairman of the board of directors, has announced. Work on the largest of these undertakings, the new Geneva Steel Works in Utah, is now nearing completion and a contract for its wartime operation has been placed by the government with Geneva Steel Company, newly formed subsidiary of United States Steel Corporation.

Wellhead Equipment Makers Plan Session at Tulsa

The next regular monthly meeting of the Association of Wellhead Equipment Manufacturers will be held at Tulsa, Friday, November 5. The subject will be "Continuation of the Standardization Program." The meeting will be held in the Tulsa Club, with dinner at 6:30 p.m. preceding the business session.

Caterpillar Company Receives National Security Award

Caterpillar Tractor Company, Peoria 8, Illinois, recently received the National Security Award from the Office of Civilian Defense, symbolizing preparedness by manufacturers on the home front.

The award, one of the first four in the country to be made by OCD, read: "The U. S. Office of Civilian Defense presents the National Security Award to Caterpillar Tractor Company, Peoria, Illinois, recognizing the maintenance of a superior standard of protection and security. Effective joint efforts to safeguard production, workers and property have made possible this achievement which stands as a mark of distinction in the nation's war effort."

L. B. Nuemiller, president of Caterpillar Tractor Company (right) receives Civilian Defense Award from E. J. Condon, director of Sixth Civilian Defense region.

Thermoid Company Announces Additions to Staff

Thermoid Company, Trenton, New Jersey, announces the appointment of Clarence B. Moore as head of the rubber division of Thermoid Research Laboratories, and Harry Bourne as methods engineer.

Moore was formerly with Goodyear Tire & Rubber Company, and later with B. F. Goodrich Company for about 15 years. He is a member of the American Chemical Society and its affiliate, the Akron Rubber Group.

Bourne has been connected with the rubber industry for over 25 years, including connections with Boston Woven Hose and Rubber Company, as plant manager, and production manager of hose with B. F. Goodrich Company.

C. B. Moore

Harry Bourne

YOUR WAR BOND STAKE IN VICTORY...

IS A STAKE IN POST-WAR PROSPERITY

Our stake in victory cannot be measured. It is the continuation of our liberty that priceless gift which free men have won after ages of fighting and which they will never give up.

Here at Mision, we are making manifest our obligation to those who won us liberty in the past and to those who are giving their lives to preserve that liberty now, by accelerated war production—day and night. Thousands of other plants throughout the nation are also stepping up their manufacturing pace. We must meet the increasing demands of the armed forces as we go into the critical phase of the war. Our all-out drive must give the knock-out punch to the gangsters who would regiment the entire human race.

One most important way we on the home front can fulfil our obligation to our stake in victory is by buying war bonds to the very limit of our ability. These bonds help keep the ever increasing stream of war matériel going to our fighters so that fewer of them will come back wounded for lack of arms. These same bonds will also give us a stake in post-war prosperity. They will provide buying power that will make a more prosperous period for our relatives and friends when they come back from the fighting fronts and for ourselves.

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ROTARY SLIPS . . . MISSION SWABS . . . MISSION PLUG VALVES

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Men in the Industry's News

VERNON L. RED, North Oklahoma district superintendent for Magnolia Pipe Line Company, has been transferred from Oklahoma City to Midland in connection with plans to create two districts in West Texas because of expanding operations. Red will be assigned the south portion, and F. D. Breedlove, district superintendent the past five years, will have charge of the Upper Basin.

ARTHUR W. HERRINGTON, chairman of the board of the Marmon-Herrington Company, Incorporated, Indianapolis, Indiana, was awarded the honorary degree of Doctor of Engineering, by Rose Polytechnic Institute of Terre Haute, Indiana, recently. The degree was conferred by Donald Bishop Prentice, Sc.D., LL.D., president of the institute.

ELMER R. SMITH, export engineering representative of Lane-Wells Company of Los Angeles has completed an extended trip through South American oil fields. His trip covered Peru, Venezuela, Colombia, Trinidad and Mexico.

KEITH WHITE is taking the place of Jeff Hawks, Sinclair Prairie Oil Company scout at Evansville, Indiana, who has been transferred to Casper, Wyoming.

M. J. KIRWAN, Cities Service Oil Company, Bartlesville, has been appointed manager of production, and C. E. Beecher has been named general superintendent of the oil production division, succeeding Kirwan in this capacity. Harry Nelson has been made acting manager of the oil pipe line and storage divisions.

FRED E. COOPER, past president of the Tulsa Chapter of Nomads, spoke to the Tulsa group October 25 on "What I Have Seen in Mexico," a talk culminating observations made on a recent trip to Mexican oil producing areas.

T. L. KISHBAUGH, who has been an alloy steel specialist with the War Production Board in Washington, has now returned to Los Angeles to resume his duties as vice president of Earle M. Jorgensen Company.

R. C. CRAZE of Humble Oil & Refining Company addressed the Houston Geological Society, October 21, on "Development and Control of Oil Reservoirs." His talk was accompanied by slides which presented data on typical fields, illustrating the mechanics and technical principles underlying reservoir behavior.

R. H. RODOLF has been appointed manager of the Pump and Compressor Division of Gardner-Denver Company, Quincy, Illinois, following the death of R. J. MacFarland. Rodolf's connection with the company dates back to 1917, when he joined Canadian Rock Drill Company then a subsidiary of the Denver Rock Drill Manufacturing Company. In 1926, he transferred to St. Louis as district manager, and was transferred to Quincy in 1939 as assistant manager of the Portable Compressor and Rock Drill Division.

Appointed as Rodolf's assistant is C. M. George, who joined the Gardner-Denver organization in Quincy in 1929.

JOHN M. DOLAN has been appointed general sales manager of Le Roi Company, Milwaukee.

After graduating from Northwestern University School of Engineering in 1927, Dolan joined Dryden Rubber Company in Chicago where he worked until 1930. He then became associated with Sullivan Machinery Company in the general sales division. After this he was made assistant to the general manager of the Western plant of that company. For the past five years he was manager of the Sullivan compressor division, supervising engineering and sales. He was a member of the safety committee of the American Foundrymen's Association; the large compressor industrial advisory committee of the War Production Board; and the Compressed Air Institute.

E. LELAND CLARK has been appointed by Walworth Company, Inc., as manager of sales in the Dallas office territory. He succeeds Chester L. Bradbury, deceased.

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